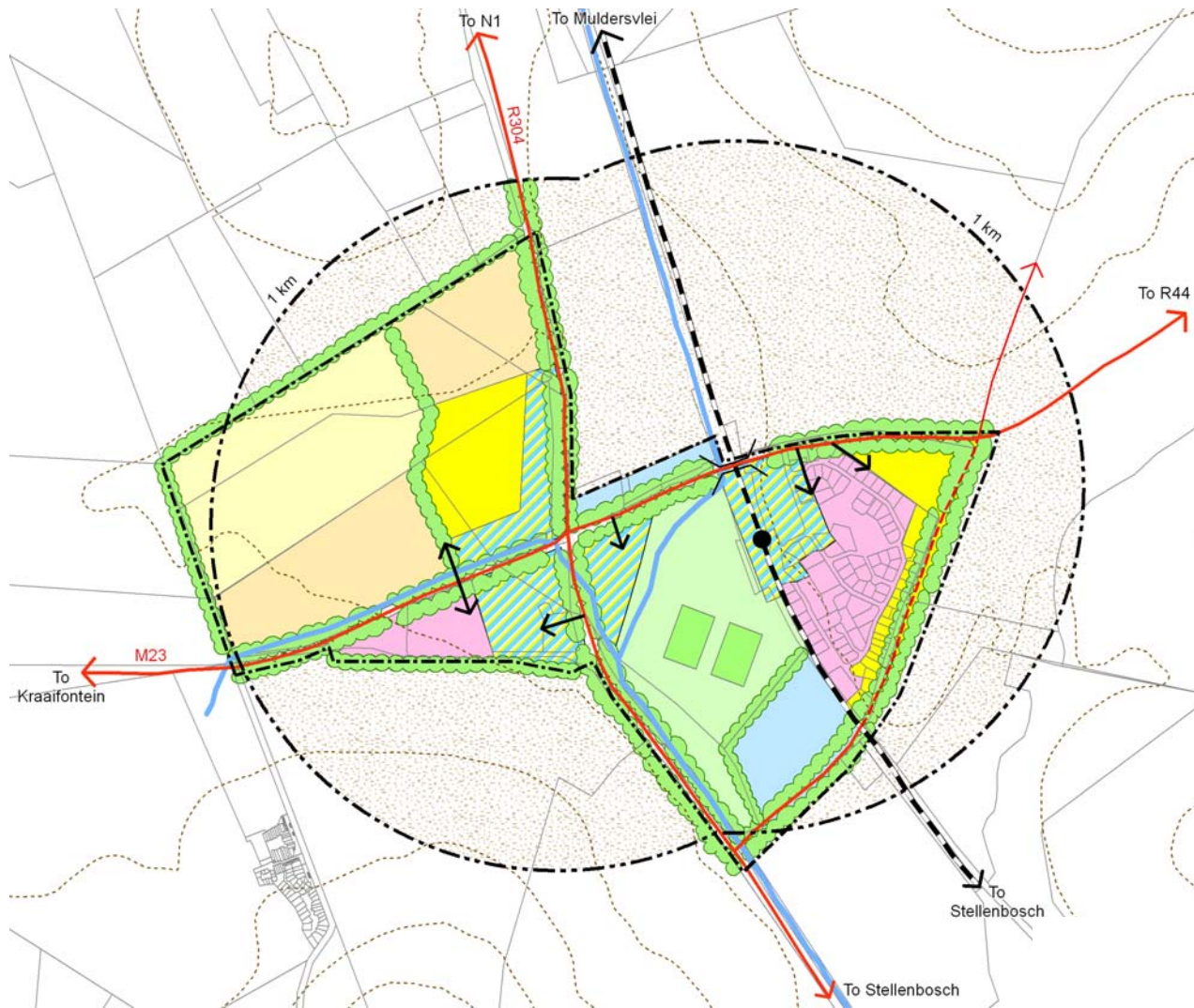


KOELENHOF

Spatial Development Framework Revision and Urban Edge Determination

FINAL DRAFT

DECEMBER 2007



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SPATIAL DEVELOPMENT FRAMEWORK REVISION AND URBAN EDGE DETERMINATION

prepared for



Stellenbosch Municipality

PO Box 17, Stellenbosch, 7599
Tel: 021 808 8652 Fax: 021 808 8651

by



CNdV
africa

CNdV africa Planning & Design (Pty) Ltd

environmental planning, landscape architecture, urban design

72 Barrack Street, Cape Town, 8000

Tel: 021 461-6302 Fax: 021 461-6466

Email: planning@iafrica.com

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1.1 PURPOSE OF THIS SDF

The purpose of this SDF is to establish to what extent Koelenhof can appropriately accommodate development so as to take advantage of its strategic location in Stellenbosch Municipality's settlement system without compromising its local environmental sustainability.

Koelenhof is a small hamlet of 2103 people (estimated) approximately 5kms north of Stellenbosch which has been experiencing development pressures. These are driven in part by the village's scenic setting, its proximity to Stellenbosch and its excellent transport infrastructure. It is located on the R304 (show on map) and the rail line where the station is served by the South African Rail Commuter Corporation (SARCC) suburban commuter service, see Figure 1.1 Locality Plan.

1.2 BACKGROUND TO THE NEED FOR SDFs

The onset of rapid urbanisation and accelerated consumption of resources in the mid 20th century created a need to show spatially how the growth of urban and rural environments should be guided in the future by using reports and maps. In South Africa this was previously done by Guide Plans in terms of the Physical Planning Act and structure plans in terms of the various provincial ordinances. These took the form of rather inflexible master plans which were underpinned by the principles of discrimination and separate development.

Accordingly, post 1994, the democratic government adopted a new system of spatial planning described in principle in the Development Facilitation Act and Municipal Systems Act. This new system had two components to it;

The first was an indicative plan or Spatial Development Framework (SDF) that was intended to show design patterns of land use, directions for future growth, indicate the alignment of urban edges, and depict other special development areas.

The legal input of spatial development frameworks was limited to **guiding and informing** land development and management. They did not change or confer real rights on land.

The second component was the Land Use Management System (LUMS). This is similar to a town planning or zoning scheme. In many instances where they haven't been replaced or repealed these still take the place of LUMS. In contrast to SDFs, LUMS have a binding effect on the development rights attributed to land and confer real rights on properties.

Because development in Municipalities is dynamic and responds to changing socio-economic and environmental circumstances, it is impossible to predict the exact requirements of development rights in every instance, therefore, LUMS may be amended from time to time to take into account these changing circumstances. This is normally achieved through the processing of rezonings, subdivisions and removal of title deed restrictions applications. It is in these instances where SDFs play an important role in guiding appropriate future change and helping to guide motivations as to the need and desirability, or not, of proposed land use changes.

Because of their guiding and informing nature SDFs also have a number of other important roles in addition to guiding LUMS.

These include:

- Giving effect to the principles contained in the Development Facilitation Act Chapter 1;
- Setting out objectives that reflect the desired spatial form;
- Defining strategies and policies to achieve these objectives which must indicate, amongst others:
 - the desired pattern of land use;
 - how spatial reconstruction will be addressed; and,
 - providing strategic guidance in respect of the location and nature of development. (In this regard it should be noted that the SDFs should inform the investment decisions of the public **and the private** sectors.)
- Set out basic guidelines for Land Use Managements Systems;

- Set out a capital investment framework for development programs (this will mainly inform public sector investment priorities);
- Identify programs and projects for development of land; and,
- Provide a visual representation of the designed spatial form with the Municipality in the form of a map which must indicate the following:
 - public and private land development and infrastructure investment;
 - desired and undesired use of land;
 - may delineate the urban edge;
 - identify areas for strategic investment;
 - where policy intervention is needed; and,
 - indicate where authority spending is required.

1.3 DEPARTMENT OF LAND AFFAIRS SDF EVALUATION CHECKLIST

The Department of Land Affairs has developed an evaluation checklist to assist Municipalities with compiling and assessing their SDFs. This checklist is broken down into the following categories:

- a. a consultation process;
- b. spatial planning approach and methodology;
- c. spatial analysis;
- d. framework for strategies;
- e. alignment;
- f. implementation plan;
- g. monitoring and evaluation; and,
- h. miscellaneous.

The miscellaneous category includes an assessment of the presentation quality of the document and to what extent it is legible and comprehensible, user friendly, has consistency in the presentation of data and graphics and provides an executive summary and a glossary of terms.

1.4 PURPOSE OF THE URBAN EDGE

The Urban Edge is a demarcated line with associated policy that aims to separate urban areas from rural and wilderness areas. The purpose of the Urban Edge is to establish the lateral limits beyond which no formal urban development ought to be permitted.

Therefore, the Urban Edge is also seen as a proactive growth management tool that aims to contain, direct and even phase growth over a period of time to achieve urban restructuring imperatives.

Given the above the Urban Edge line therefore marks the transition between rural and urban land uses. If the Urban Edge line is used as a tool to limit outwards growth of existing urban areas, the Urban Edge is seen as one of the mechanisms to protect rural areas from what is commonly known as urban sprawl, urban leapfrogging or urban creep.

The formal definition of the Urban Edge, as contained in the Departmental Guidelines for the Management of Development in Mountains, Hills and Ridges of the Western Cape, 2001 is as follows:

Two types of Urban Edges can be drawn:

- Hard edges – drawn on development line or an urban area
- Soft edges – allows for a gradual transition from high intensity to low intensity uses, e.g. schools, sportsfields, etc.

In summary the Urban Edge:

- Helps to restructure – allows for integration
- Growth management tool – where growth cannot take place
- Conservation tool – natural areas
- Promote urban and environmental efficiency, effectiveness and economy in the interest if all

“it is a demarcated line to managed, direct and control the outer limits of development. The intention of the urban edge is to establish limits beyond which urban development should not be permitted.”

1.5 LEGAL STATUS OF THE SDF AND URBAN EDGE

Within the constraints of the SDF as laid down by the Municipal Systems Act, i.e. that it should be a guiding and informing document and does

not confer real rights on land, it is intended that the SDF, that includes the Urban Edge, should be a binding document that is approved by Council as appropriate. Without this endorsement it will be difficult for the recommendations to have any meaningful impact on future development patterns in the Municipality.

1.6 CONSULTANT'S BRIEF

According to the consultant's brief, the following work has to be completed:

Phase One : Analysis

Phase Two : Strategy Formulation including Urban Edge

Phase Three : Project Identification

Phase Four : Integration and Production of Draft SDF

Phase Five : Approval of SDF

During this period the following public participation and information distribution is proposed:

- i. The study should be advertised and I&APs requested to register.
- ii. A list of I&APs and stakeholders will be supplied by the Municipality.

Two workshops are intended. The first will be an introductory and status quo workshop. The second will be the proposals workshop. These workshops will be held with the general public.

The following deliverables are required:

- i. Resumes of meetings;
- ii. Powerpoint slide shows and handouts at presentations;
- iii. Report to be developed incrementally as project progresses;
- iv. Status quo maps;
- v. A set of proposals maps.

1.7 STUDY AREA

The settlement of Koelenhof is located approximately 4km north of Stellenbosch along the R304 and is centered around the intersection of the R304 and the M23, see Figures 1.1, 1.2 and 1.3.

The R304 connects Koelenhof to the N1 Freeway further north. The M23 connects to the R44 east of Koelenhof which in turn connects through to Klapmuts, to the N1 up north and down south towards Stellenbosch and the Strand.

The western connection of the M23 leads to Kraaifontein and the City of Cape Town.

The study area measures approximately 3373ha.

The urban development focus area is located around the intersection of the M23 and R304; and at the station. A 1km radius (see motivation for distance in Section 3.1 below) is drawn around these two nodal points and the area covered by the circles is used as the focus area for the urban development proposals.

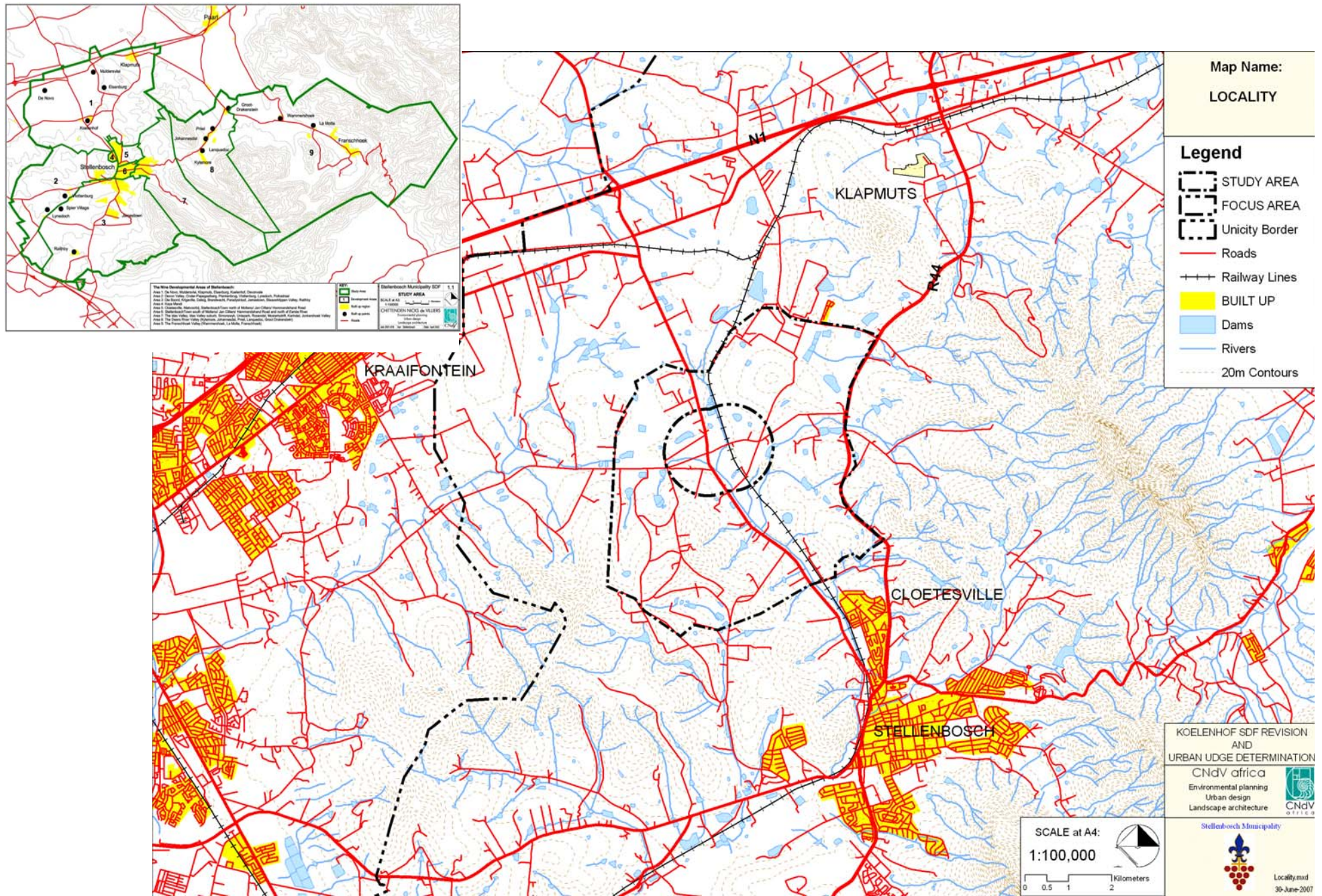
The northern most boundary of the study area is approximately 3.6km away and the southern most boundary is approximately 4,5km from the intersection of the R304 and M23, see Figure 1.3.

The eastern boundary of the study area is delineated by the R44.

Portion 3 of Farm 72, Rem Farm 80, Portion 1 of Farm 80, Erf 1350, Portion 16 of Farm 78, Portion 23 of Farm 65, Portion 17 of Farm 65, Portion 51 of Farm 90, Portion 50 of Farm 9, and Portion 1 of Farm 76.

Along the western boundaries of Portion 1, 10 and 11 of Farm 76, Erf 1387, Portion 4 of Farm 65, Erf 1423, Portion 52 of Farm 65, Erf 1164 and Portion 16 of Farm 650.

Along the northern boundary of Portion 16 of Farm 66, Erf 1413, Portion 15 of Farm 66 and Farm 45. North along the railway line, along the northern boundary of Portion 2 of Farm 37 and along the northern boundary of Remainder Farm 34 and Remainder Farm 1063 until it connects to the R44, see Figure 1.3.



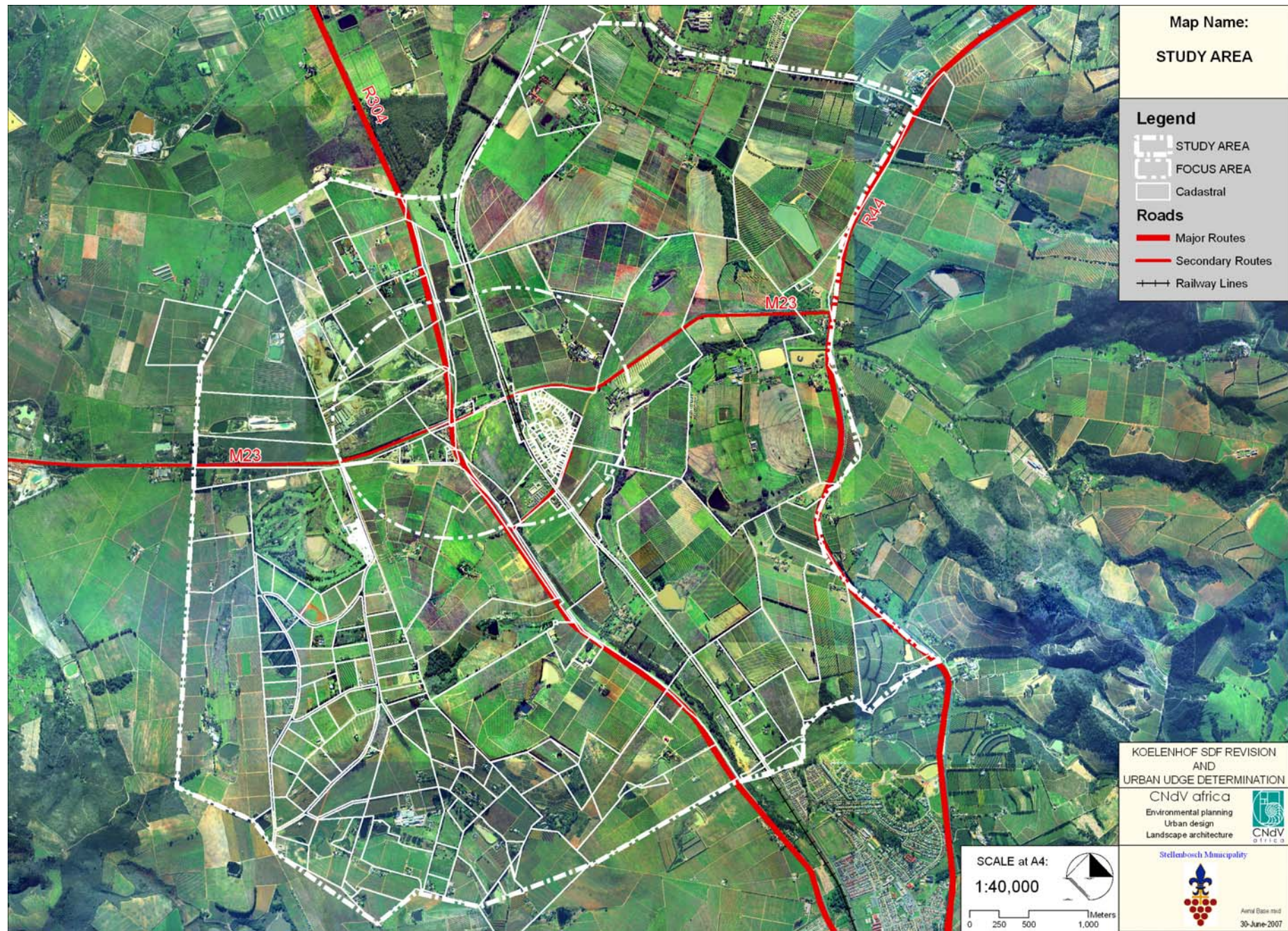


Figure 1.3 Study Area

2. OVERARCHING GOALS

- 2.1 Sustainable Development
- 2.2 Bioregional Planning

2.1 SUSTAINABLE DEVELOPMENT

The overarching goal that should be informing SDFs, IDPs and State of the Environment Reports (SoERs) is sustainable development. The most appropriate definition of sustainable definition remains that of the Brundtland Commission.

“Sustainable Development is the capacity to meet the needs of the present without compromising the ability of future generations to meet their own needs”.

However, the term “Sustainable Development” is often used without there being any real understanding of the implications of this goal on current lifestyles, development processes, and how various spheres of government and the private sector conduct their business.

One of the main tools to achieve sustainable development is the “Triple Bottom Line Relationship Framework”.

2.1.1 Triple Bottom Line Relationship Framework

Reference has been made to the importance of environmental sustainability. This should be achieved at the same time as meeting a number of socio-economic demands and requirements as soon as possible.

Therefore, there is a need for some kind of a framework in which all of these competing requirements can be mediated. This has given rise to the Triple Bottom Line Relationship Framework.

This framework is based on the principle that the relationship between economic efficiency, social justice and human well-being, and ecological integrity is not one of equal and overlapping spheres where trade-offs in the one can be set off by enhancements in another. Rather, it recognises firstly, that economic efficiency is **wholly** dependent on the quality of human resources and their ability to deliver their productivity into an economic system; and,

Secondly, economic and social development cannot demand more from eco-system services than their capacity to deliver on a long term sustainable basis.

Because there is only one planet and it operates within a closed ecological cycle it is not possible to exceed the capacity of this system in the long term. Therefore, any over-demand in the short term will lead to long term negative consequences.

Figure 2.1 illustrates this relationship by depicting economic efficiency as a circle nesting **within** social justice and human capital which, in turn, both nest **within** the circle of ecological integrity. This illustrates graphically the dependence of economic development and human reproduction on eco-system services.

What this triple bottom line relationship framework therefore, implies is that these three components, namely ecological integrity (environmental capital); social justice (human capital); economic efficiency (economic capital) form part of a closed ecological cycle in which all activities affecting these components needs to be dealt with in such a way that it achieves sustainable development.

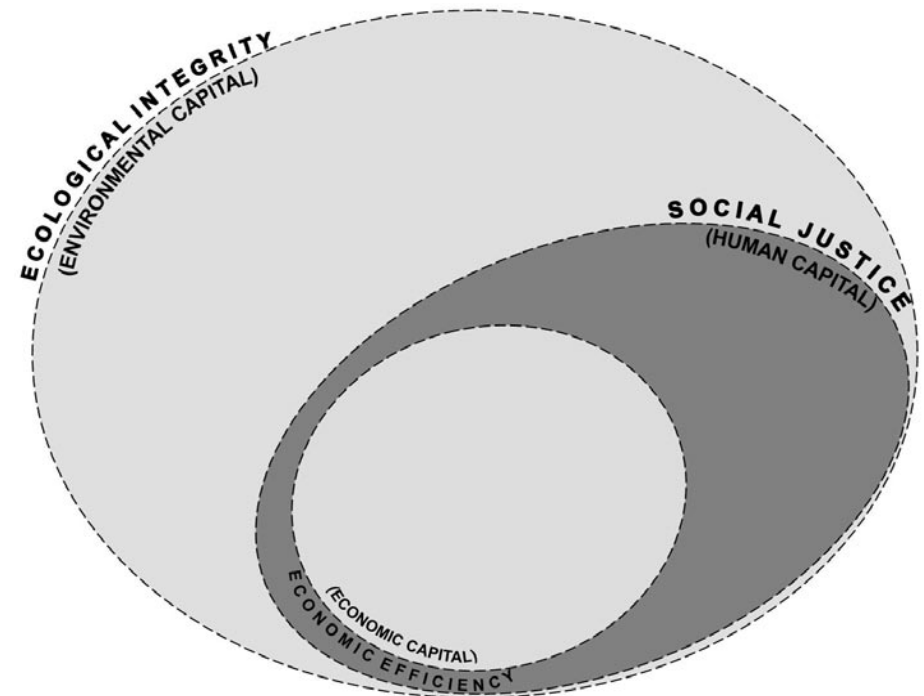


Figure 2.1 The Triple Bottom Line

This implies that any **extraction** in the form of utilization of the land and water as examples in the ecological integrity or environmental capital sphere in order to aid human **reproduction**, satisfying the people in settlements under social justice or **production**, manufacturing, transport, communication, etc. under economic efficiency and **decomposition** back in the ecological integrity needs to be done in such a way that it promotes sustainable development, see Figure 2.2.

The above also implies that these four components, extraction, human reproduction, production and decomposition create a closed ecological cycle. Therefore, the utilization of these components needs to be carefully considered so as to continue its utilisation into the future. This indicates that there is a relationship between all four of these activities as they are found in the different nests of either ecological integrity, social justice or economic efficiency. All of these activities therefore have an impact on sustainability.

Therefore, the one impacts on the other in forward and backward directions, see Figure 2.2.

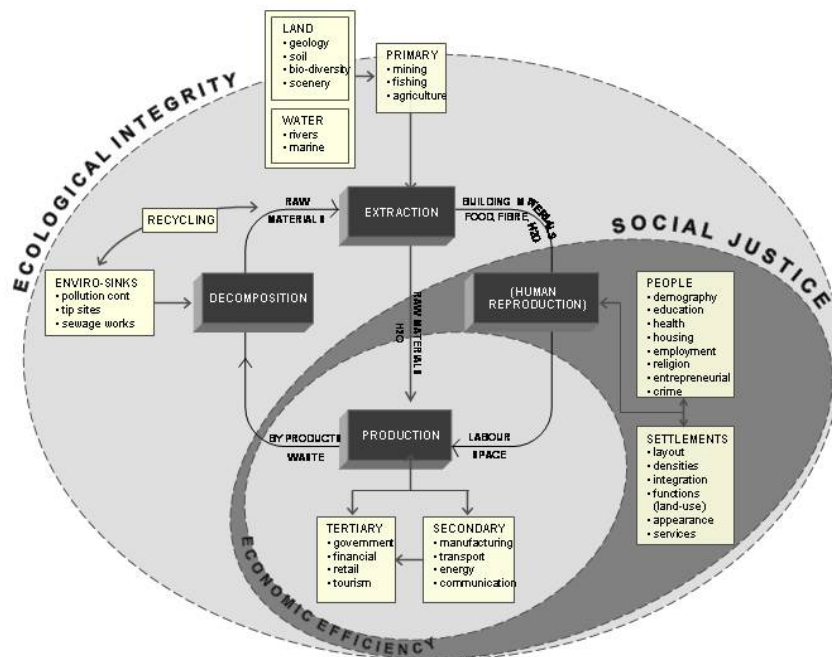


Figure 2.2 The Relationship Framework

2.2 BIOREGIONAL PLANNING

Bioregional planning is a methodology for simply and effectively addressing land use management in regional planning. Four main zones or areas can be identified.

2.2.1 Core Areas

It is based on the principle that there are important areas of biodiversity and ecosystems services functioning that should be disturbed as little as possible, for example:

- Mountain and river catchment areas;
- Wetlands;
- Sensitive coastlines; and,
- Important or rare areas of biodiversity.

In some instances it may be appropriate to identify ecological corridors which help to link and ensure the viability of separated areas of important biodiversity.

2.2.2 Buffer Areas

Around these core areas are buffer areas of less ecological importance where agriculture and other primary activities such as mining may be carried out according to sustainable principles.

2.2.3 Intensive Agricultural Areas

Due to the important role that intensive agriculture plays in ensuring food security, providing low skilled employment and its scarcity in SA, which is an arid country, this activity is identified as a separate planning zone.

2.2.4 Urban Development Areas

Outside of these areas are locations suitable for urban development where a high degree of land transformation can occur but taking care to ensure that the pre-conditions for effective settlement development are met.

The bioregional planning zones provide a high level land use guideline that can successfully be used to inform regional and urban development patterns.

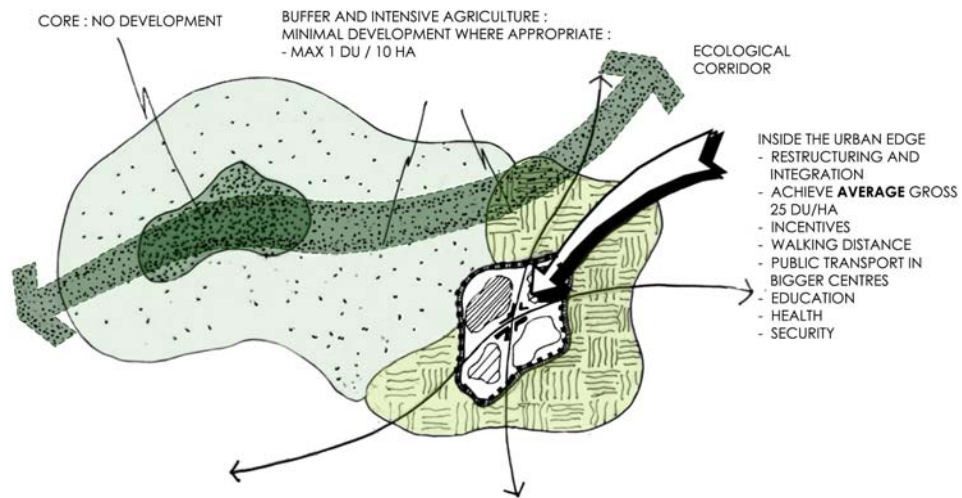


Figure 2.3 Bioregional Planning Zones

3. CONCEPTUAL APPROACH

- 3.1 Walking Distance as the Primary Measure of Access
- 3.2 Functional Integration
- 3.3 Socio-Economic Integration
- 3.4 Densification and the Urban Edge

There are four principles guiding the conceptual spatial approach taken in this SDF.

3.1 WALKING DISTANCE AS THE PRIMARY MEASURE OF ACCESS

A major component of spatial planning is understanding the relationships between different activities in terms of proximity, access, and time.

The extent to which these relationships are near or far is a major determinant on the efficiency, equity and general quality of life in urban settlements and rural areas.

To date, there has been relatively little attention paid to the importance of space in this manner with the result that the current pattern of urban and rural space is generally grossly inefficient. In particular, access tends to be measured in terms of travelling times by private motor vehicles.

If activities are considered close to each other it is usually because they are 5 minutes or 10 minutes drive. At 60km per hour 5 or 10 minutes travelling time translates itself into distances of between 5 and 10 kilometres. This is grossly discriminating and inefficient for commuters in general and the urban poor in particular who do not have access to private vehicle motor vehicles, may be unable to afford public transport, (in many instances public transport is simply not available), or have to walk extremely long distances to fulfil their daily needs.

Therefore, it is proposed that the primary measure of access is always appropriate walking distance.

Although walking distance speeds vary depending on the age, levels of health and the amount of parcels that may be carried international and local studies have shown that a 20 minute walk is about the maximum that people can walk conveniently before there is a need for motorised, public or private transport.

An average walking distance of 20 minutes is approximately 1000m or 1km, see Figure 3.1.

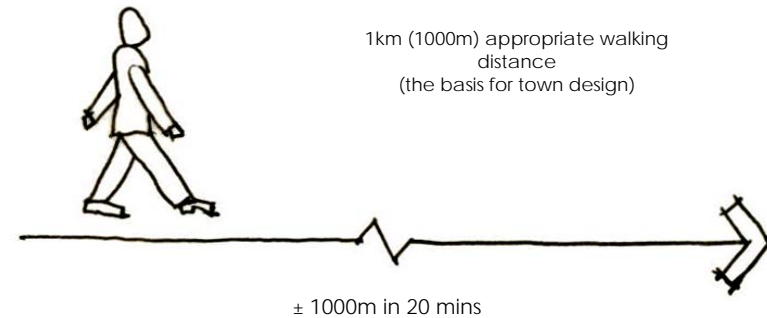


Figure 3.1 Appropriate Walking Distance

So, for the purposes of this SDF access, i.e. whether activities are acceptably near or far from one another, will be measured in terms of convenient walking distance.

If walking distance is taken as the primary measure for access and convenience it can be seen that it will have a major transformational and restructuring impact on urban settlements particularly if the following principles are also fulfilled.

3.2 FUNCTIONAL INTEGRATION

Most South African urban settlements are characterised by separation of urban activities so that employment areas, industrial, commercial and CBDs tend to be located far from places of residence, see Figure 3.2.

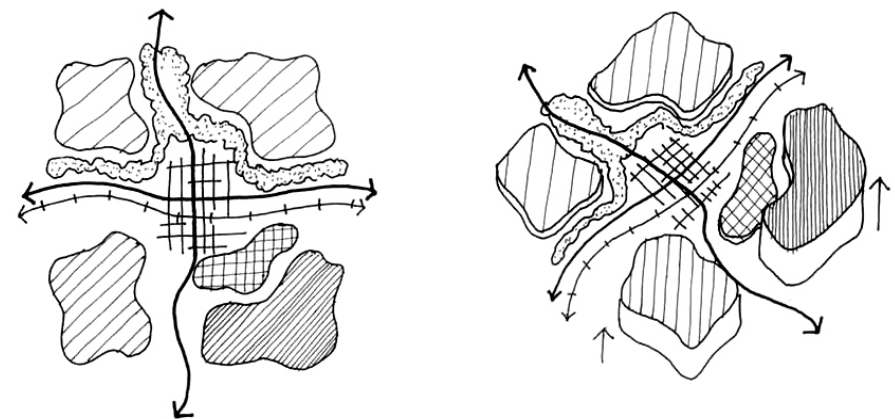


Figure 3.2 Functionally and socially separated

Similarly, retail and shopping activities, particularly the trend towards regional shopping centres, are spatially divorced from other activities. Social and recreational activities, especially the larger parks and stadia, follow a similar pattern. As a result it is difficult for people to reach all of these different activities.

This creates the morning and evening tidal commuter flow between places of work and home that occurs in most South African cities and towns. This is less pronounced in smaller settlements but nevertheless most people have to overcome considerable distances to access the various activities that comprise their livelihoods. Where commuters have access to private motor vehicles the friction of these distances is overcome to some extent but at considerable cost in terms of fossil fuel consumption, time, and pollution.

The principle of Functional Integration proposes that at least 50% of all of livelihood activities should be found within walking distance especially in urban settlements.

Implementing this principle will result in profound changes in the current land use patterns in urban settlements.

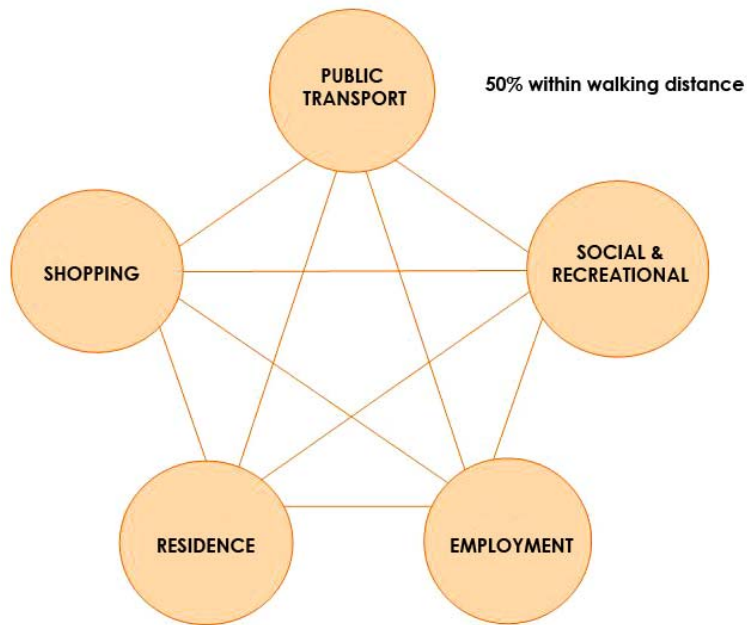


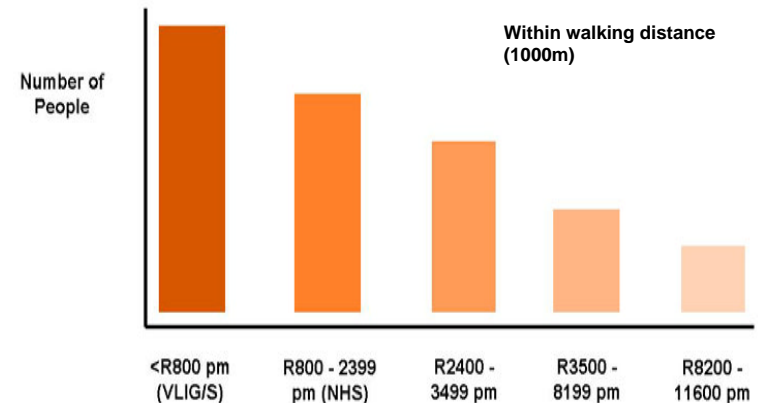
Figure 3.3 Integration of Urban Activities

3.3 SOCIO-ECONOMIC INTEGRATION

One of the most debilitating effects of apartheid was the splitting up of urban settlements, not only along socio-economic lines, but also on racial grounds. There continues to be a strong correlation between racial and socio-economic lines. Although most urban settlements around the world experience clustering of people of similar levels of living and, in some cases, ethnic groups, this has generally been organic rather than forced as happened under the implementation of the Group Areas Act.

The principle of Socio-economic Integration proposes that, within walking distance, a complete range of all socio-economic groupings within an urban settlement should be present.

This is a considerable departure from the current layout of most settlements where the complete range of socio-economic groupings is only found over distances of between 5 to 10km and even further in some large towns and cities.



Graph 3.1 Socio-economic Integration

However, the process of socio-economic integration still needs to be informed by current realities facing South African socio-economic conditions. These include:

- the resistance that often manifests itself in for form of objections, appeals and court action as a result of the NIMBY syndrome (**not in my backyard**), when it comes to integrating housing particularly when

lower income or subsidy housing is proposed near middle income areas;

- the conservative nature of South African banks, particularly when it comes to property loan finance and the fact that bank valuers will downgrade property values if informal settlements or low income houses are near middle and high income urban development.

Therefore, there is a need to acknowledge a further principle in this regard. This principle recognises that communities with very large gaps in levels of living abutting one another can create considerable resistance and objections.

The principle of the Socio-economic Gradient recognises that where there is a relatively small difference in levels of living and property prices between different communities it is generally possible to achieve a high level of integration.

If this principle is applied sensitively, it is still possible to have a complete range of income groups living within a 1km radius of each other, see Figure 3.4.

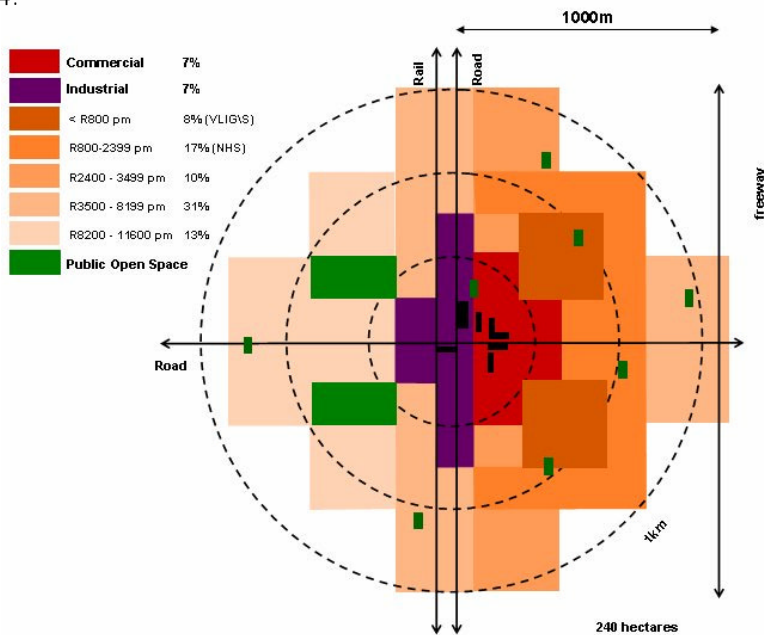


Figure 3.4 Model of Socio-economic Integration

If carefully done, this can result in high levels of urban efficiency and access particularly for the urban poor. For example, it could become possible for domestic workers and labourers to walk to their places of employment rather than having to take a number of long transport trips, often involving several changes in mode, in order to commute between work and home.

This pattern of integrated socio-economic living areas is not one that is foreign to most South African settlements. A relatively high degree of such integration existed before the implementation of the Group Areas Act in the 1950s and 1960s, although there were already moves in certain instances to spatially separate out particularly low income housing.

Figure 3.5 shows the high level of racial and socio-economic integration that existing in Cape Town, using Mowbray as an example, prior to implementing of the Group Areas Act.

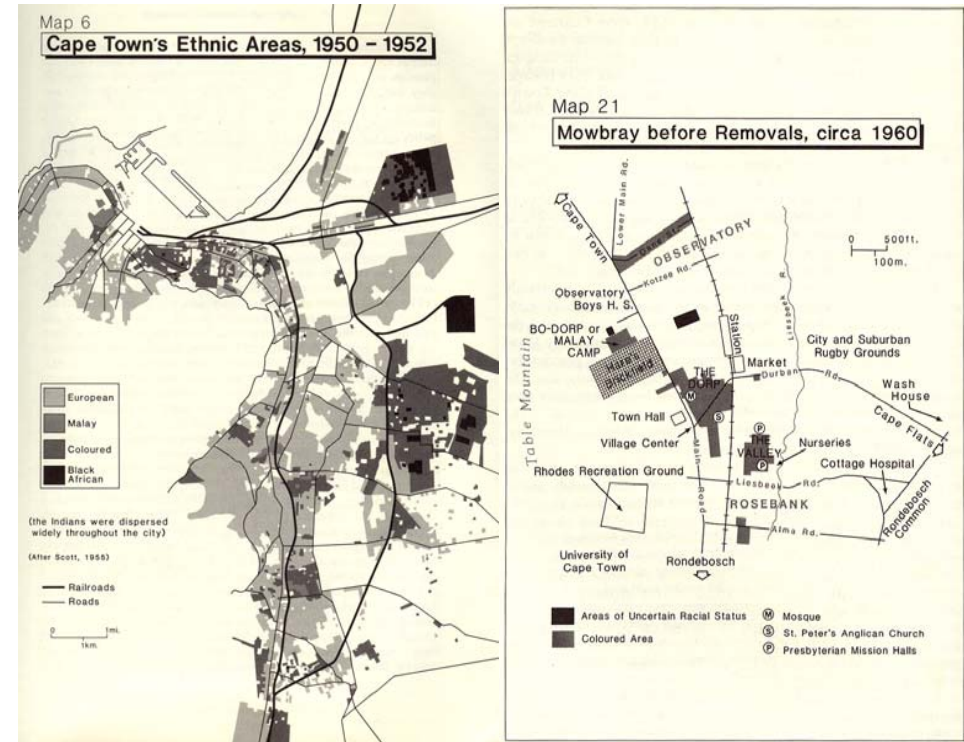


Figure 3.5 Cape Town before the Group Areas Act (source: John Western, Outcast Cape Town, 1996)

Figure 3.6 shows a recent example of integration in the development of the Marconi Beam settlement. Here, a low income housing subsidy scheme is situated adjacent to a middle income housing scheme across the road from a high income housing area where luxury homes have magnificent views of the sea. The low income and high income housing areas are approximately 700 metres apart.

The major routes in the settlement are lined with private sector driven commercial development and abut a thriving industrial area. This project is approximately 10 years old and there is no sign that the property values of the various urban development components have been negatively affected by the nearby location of the low and middle income housing.

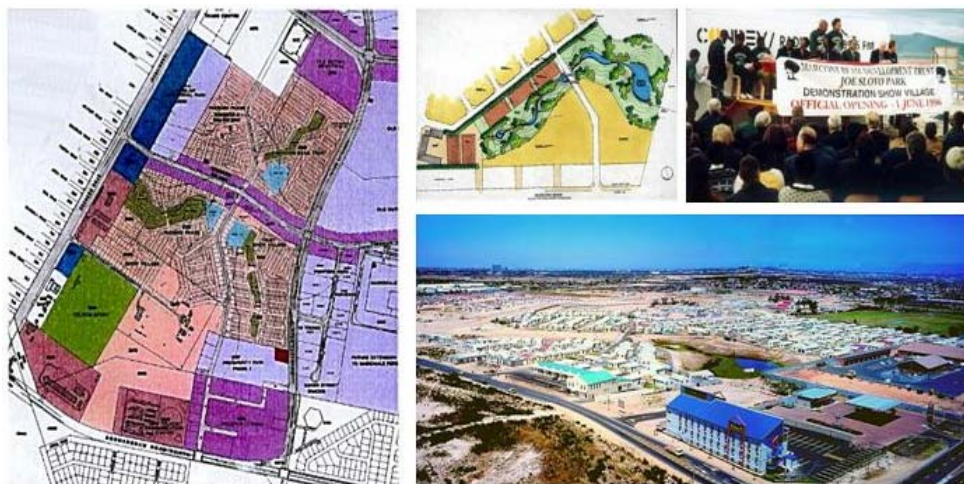


Figure 3.6 Marconi Beam, Milnerton, Cape Town

Figure 3.7 shows how a sensitively designed low income housing scheme in Langebaan is located in the centre of the town immediately abutting a high income golf estate, currently under construction.



Figure 3.7 Langebaan IDP Housing Scheme

3.4 DENSIFICATION AND THE URBAN EDGE

Achieving a settlement pattern that is largely based on walking distance and socio-economic and functional integration requires, in most cases, a fundamental adjustment to the land use patterns within urban settlements. This is because, compounded by the separated land use pattern, the population density of most settlements is too low for viable thresholds to provide sufficient support for public transport services, small businesses and community facilities, and the creation of an urban “vibe” that make settlements attractive, convenient and pleasant places to live in.

Therefore, there is a need for mechanisms to address these challenges.

3.4.1 Densification Plan

There are two main aspects to this challenge. The first is to promote densification whereby, according to a well thought out plan that takes into account environmental factors such as biodiversity and the water quality and quantity of river systems, public open space requirements and areas for economic activity, the densities of a settlement are increased.

In most South African settlements urban densities need to double.

Although the key relationship is population density, from an urban management point of view, densification is most easily managed through measuring dwelling units. There is a close relationship between population density and dwelling unit density, the number of dwelling units per hectare.

3.4.2 The Urban Edge

An important device to assist with the integration of an urban settlement's land use pattern and to increase its densities is the Urban Edge. An Urban Edge can assist to encourage inward growth of a settlement in order to achieve sustainable internal densities. An Urban Edge also plays an important role in protecting important agricultural, scenic, and biodiversity land resources in its immediate hinterland.

Traditionally Urban Edges in South African SDF's have tended to be located where the current low density urban growth trends can continue unchecked for another 10 to 20 years. This has led to numerous examples of urban sprawl with the associated urban management problems of increasingly far flung areas that are difficult and expensive to service as well as loss of important agricultural, scenic and land for biodiversity.

This pattern can be likened to a "doughnut" whereby there is an increasing move of low income, middle income and high income housing as well as industrial and office estates and regional shopping centres to the periphery of settlements; see Figure 3.8

The antidote to this process is the "cupcake", whereby the outward growth of an urban settlement is constrained while urban restructuring and densification occurs within its interior.

However, it is important that densification does not occur willy-nilly but supports an overall plan and restructuring concept for the settlement.

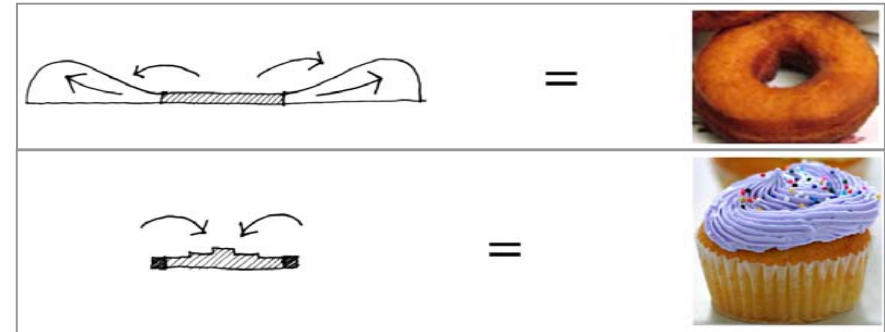


Figure 3.8 From "Doughnut to Cupcake"

3.4.3 The Principles of a Densification Plan

The basic principle is that densities should increase along major movement corridors and areas of highest access and potential, and can decline towards the urban periphery.

This implies that although an **average** density of a settlement should be at least 25du/ha there can be considerable variations within this figure with densities as high as 70 - 100du/ha (three to four storeys) in the centre while on the periphery densities could be as low as 4 - 8du/ha, see Figure 3.9.

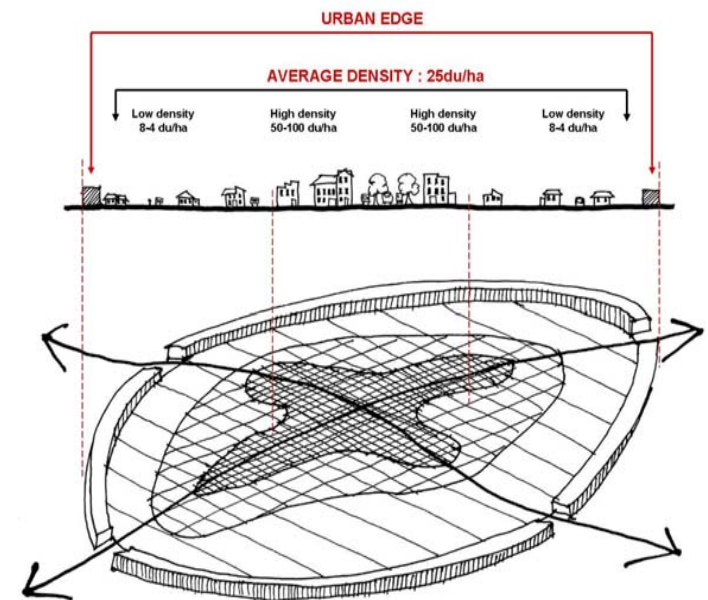


Figure 3.9 Densification and the Urban Edge Concepts

4. PLANNING AND POLICY FRAMEWORKS

- 4.1 National Spatial Development Perspective (NSDP)
- 4.2 Development Facilitation Act
- 4.3 Western Cape Provincial Spatial Development Framework (WCPSDF)
- 4.4 Urban Edge Policy
- 4.5 Cape Winelands District Municipal Spatial Development Framework
- 4.6 Stellenbosch Municipal Spatial Development Framework
- 4.7 Stellenbosch Integrated Development Plan
- 4.8 Koelenhof Neighbourhood Area and Rural Settlement Spatial Development Framework

In addition to the principle of sustainable development there are a number of overarching guidelines that must inform SDFs.

4.1 NATIONAL SPATIAL DEVELOPMENT PERSPECTIVE (NSDP)

The first of these is the National Spatial Development Perspective (NSDP). The NSDP is an effort by National Government to find the best way of allocating scarce resources in the various geographic regions in the country. The basic premise of the NSDP is that if there are not enough resources to satisfy all needs wherever they may occur then they should be allocated to where the benefits will be greatest.

- There are five major principles of the NSDP:
- Economic growth is most likely to continue where it has previously occurred and therefore economic potential will be highest in these localities (NSDP, pg 24);
- Economically active people will tend to move to localities where jobs or other livelihoods are available (NSDP, pg 24);
- Efforts to address past social inequalities should focus on people and not in places where it will be difficult to promote sustainable and economic growth (NSDP, pg 24);
- It is important that people are trained and skilled to participate effectively in the economy. Because of the tendency of people to move to areas of greatest opportunity especially when they have skills, programs in areas with low economic development potential should focus on enhancing people skills rather than the construction of fixed infrastructure.

This will avoid the risk of such investment becoming redundant if people move away or there is not sufficient demand to justify high levels of expenditure;

- Future government spending on infrastructure and development should be in localities that would not become poverty traps (NSDP, pg 25);
- Figure 4.1 illustrates the principles of the NSDP Spatial Guidelines.

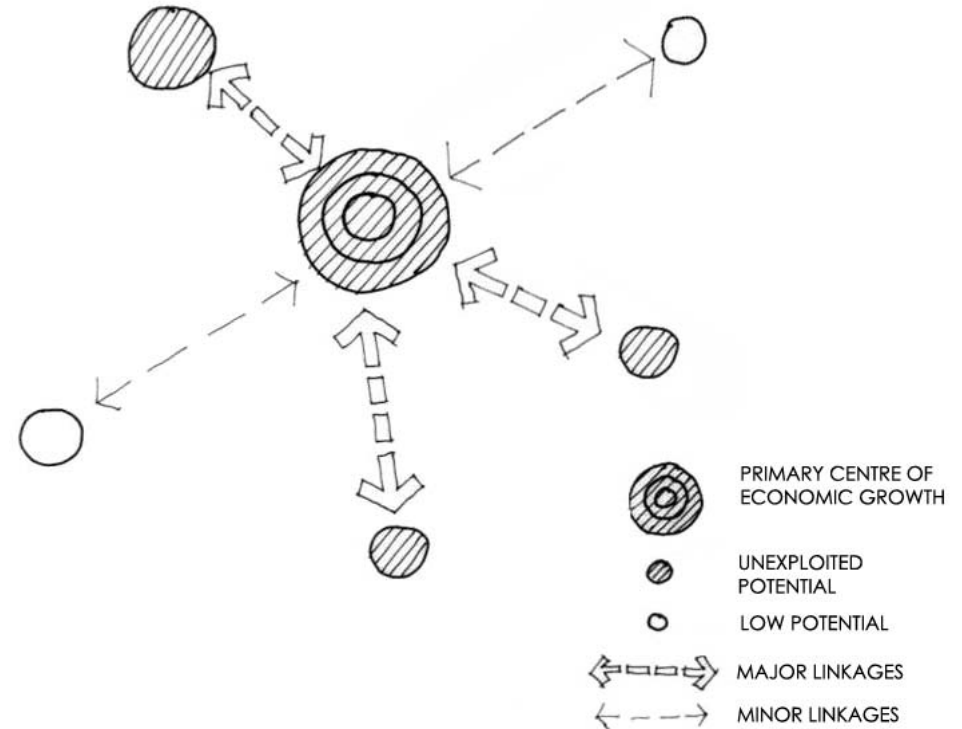


Figure 4.1 NSDP Spatial Guidelines

Centres which have existing or potential economic growth should be the priority for economic investment, i.e. fixed infrastructure such as housing, underground services and roads. Centres with low economic potential should not be priorities for fixed infrastructure.

However, social capital programs such as health, adult basic education and training, entrepreneurship development, and business and technical training should be directed to wherever people may require them. In this way, should the recipients decide to move to other centres, they will, in effect, be able to take this investment with them.

Facilities for the delivery of these programs in centres or areas of low economic potential should use and share existing facilities. In many of these locations there are under-utilised school buildings, clinics, etc. which could be refurbished and used as multi-purpose centres.

The NSDP also recognises that development potential tends to be greatest along linear corridors or axes, see Figure 42. This is as a result of the relationship between urban nodes of opportunity and the transport and communication routes that connect them. In some instances a river whose banks also have enhanced economic opportunities could also give rise to linear development corridors as a zone of investment priority.

Difficult Choices and Decisions

The principle of allocating investment into areas of greater economic potential is considered controversial in situations where there is a concern that this might lead to socio-economic or spatial marginalisation of areas of less economic potential. While this is a valid concern, it needs to be clearly understood that in spatial terms resources are not equally distributed.

Figure 4.3 illustrates the difference between ideal relationships where all space is equal, people are distributed evenly across that space, and resources and opportunities are also equally distributed and the reality is that space is warped by the realities of topography, the unequal distribution of mineral resources, and the greater concentration of ecosystem services such as water, soil fertility, areas of biodiversity, in some areas than in others.

As a consequence of the warping of these patterns different parts of the landscape have greater opportunities than others. This, in turn, is reflected by the uneven development of infrastructure providing access to these areas of opportunity.

This leads to a similarly biased or uneven pattern of economic potential and population distribution.

It is important that the uneven pattern of these very powerful underlying forces is understood when resources are being allocated so as to minimise wastage and inefficiencies.

4.2 DEVELOPMENT FACILITATION ACT

The Development Facilitation Act (DFA) provides an important set of overarching guidelines in the principles contained in Chapter 1 of the Act, see Figure 4.4.

Promote efficient and integrated land development:

- Integrate social, economic, institutional and physical aspects of land development;
- Integrate land development in rural and urban areas;
- Promote availability of residential and employment opportunities in close proximity to each other;
- Optimise the use of existing resources;
- Promote a diverse combination of land uses;
- Discourage the phenomenon of urban sprawl and contribute to development of more compact towns and cities;
- Contribute to the correction of historically distorted spatial patterns of settlement in the Republic; and,
- Encourage environmentally sustainable land development.

Figure 4.4 DFA : Chapter 1 Land Development Principles

Key themes contained in these principles include:

- Socio-economic integration;
- Rural and urban integration;
- The promotion of high levels of access that could minimise the need for the use of the private motor vehicle; and,
- Limiting urban sprawl so as to increase urban efficiencies relating to business thresholds and minimise the impact of urban growth on agricultural land, areas of scenic beauty and areas of high biodiversity potential.

SDFs should indicate how they effectively contribute to achieving these principles.

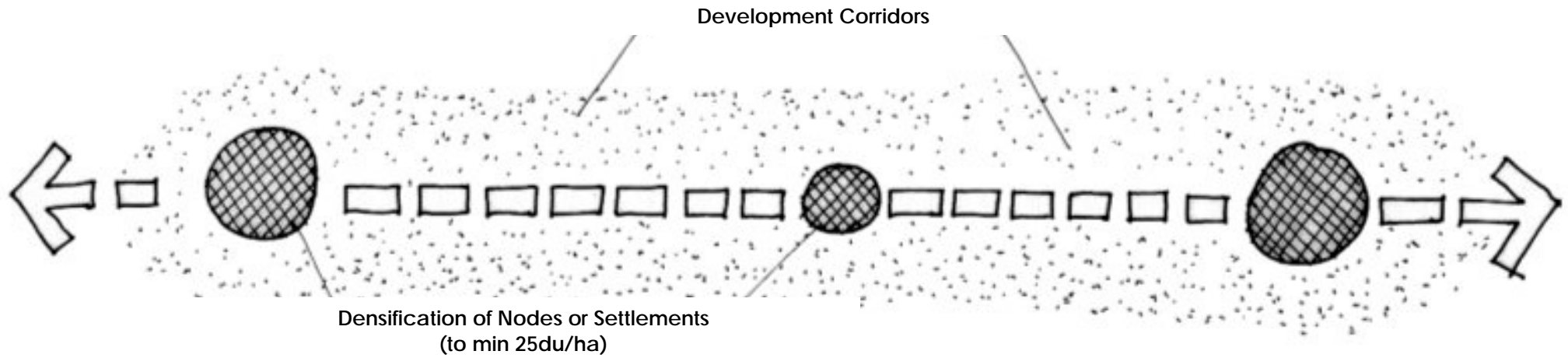


Figure 4.2 Development Potential along Linear Corridors

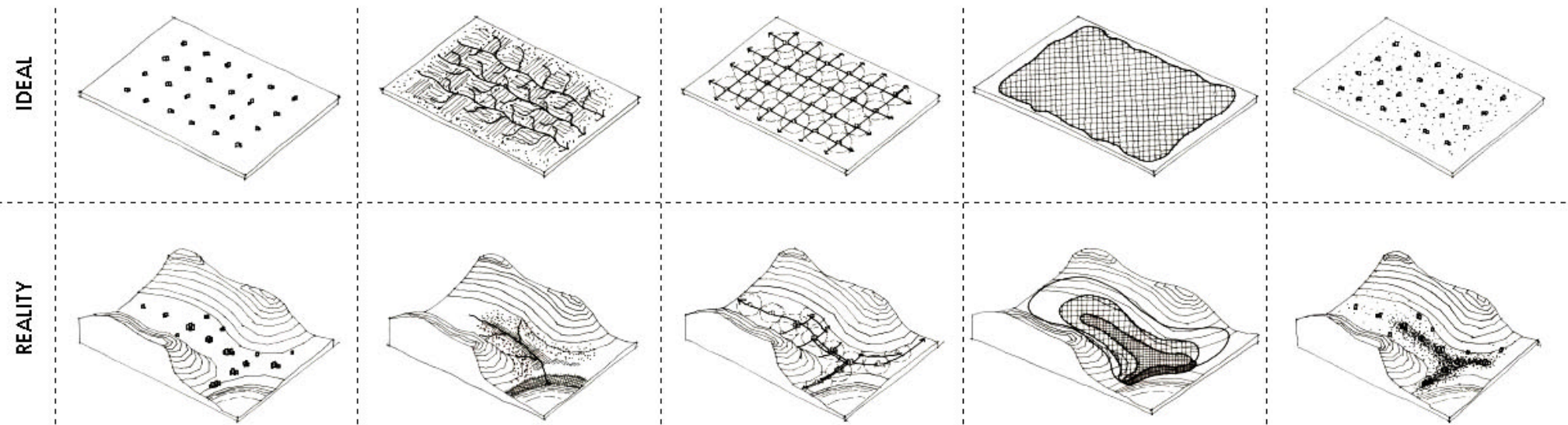


Figure 4.3 The Warping of Equity by Space

4.3 WESTERN CAPE PROVINCIAL SPATIAL DEVELOPMENT FRAMEWORK (WCPSDF) (ref: CNdV africa, 2006)

The Western Cape Provincial Spatial Development Framework was adopted by the provincial cabinet in December 2005 and aims to give direction and guidance for the spatial development within the Western Cape.

This policy document formulates proposals that deal with the following areas of intervention: social economic development; urban restructuring and environmental sustainability.

The WCPSDF composite map indicates the broad spatial planning categories derived from the approach to bioregional planning. The five broad spatial categories provide policies for development and activities in the:

- Core areas;
- Buffer areas;
- Intensive agriculture areas;
- Urban development; and,
- The urban edge, see Figure 4.5.

It is understood that the broad spatial planning categories will be refined at a detailed level by the district and local SDFs when those level SDFs are prepared.

The prioritisation of the provinces' urban settlements is indicated with respect to the relative levels of human need and economic potential so as to prioritise fixed investment and human need.

The study relating to the growth potential of towns outside of the City of Cape Town municipal jurisdiction has underpinned the proposals relating to the prioritisation of areas for fixed investment and those areas that would only receive human needs programs or social investment. In this regard it is to be noted that Koelenhof was not identified or listed among the 132 towns that were assessed.

The broad provincial SDF identified Stellenbosch as an area that could be seen as a potential agricultural development node with the key focus on agriculture and food processing.

It also sees Stellenbosch, Franschhoek and Paarl as areas with tourism potential as part of the Winelands Tourism Development Area or the Winelands Triangle.

The WCPSDF further identifies the N1 and the N2 Freeways as major transport corridors with major linkages. Both of these routes, especially the N1 Freeway is within relatively easy proximity to Koelenhof. With regard to urban restructuring and integration proposals relating to the urban settlements, the WCPSDF proposes that urban edges be defined around current urban developed areas to contain the outward growth of areas and to increase the densities within those areas to an average of 25du/ha. Only resort types of development will therefore be permitted outside of those urban edges.

The WCPSDF is underpinned by the following objectives:

- Objective 1: Allowing the future settlement pattern of the province with economic potential and allocation of environmental resources for environmental opportunities
- Objective 2: Deliver human development and basic need programs wherever they may be required
- Objective 3: Strategically invest scarce public sector resources where they will generate the highest socio-economic returns
- Objective 4: Support land reform
- Objective 5: Confirm and strengthen the sense of place of important cultural landscapes, artefacts and buildings
- Objective 6: Heal the apartheid structure of urban settlements
- Objective 7: Conveniently locate urban activities and promote public and non-motorised transport
- Objective 8: Protect biodiversity and agricultural resources
- Objective 9: Minimize the consumption of scarce environmental resources particularly water, fuel, burning materials, mineral resources, electricity and land.

Implications for Koelenhof

- Need to determine the spatial planning categories;
- Need to determine an urban edge to achieve density targets and preserve sensitive areas;
- Could form part of the Stellenbosch broad agricultural development node with a focus on agriculture and food processing;
- Could benefit from the Winelands Triangle Tourism Initiative; and
- Any future development of Koelenhof needs to be linked to its growth potential.

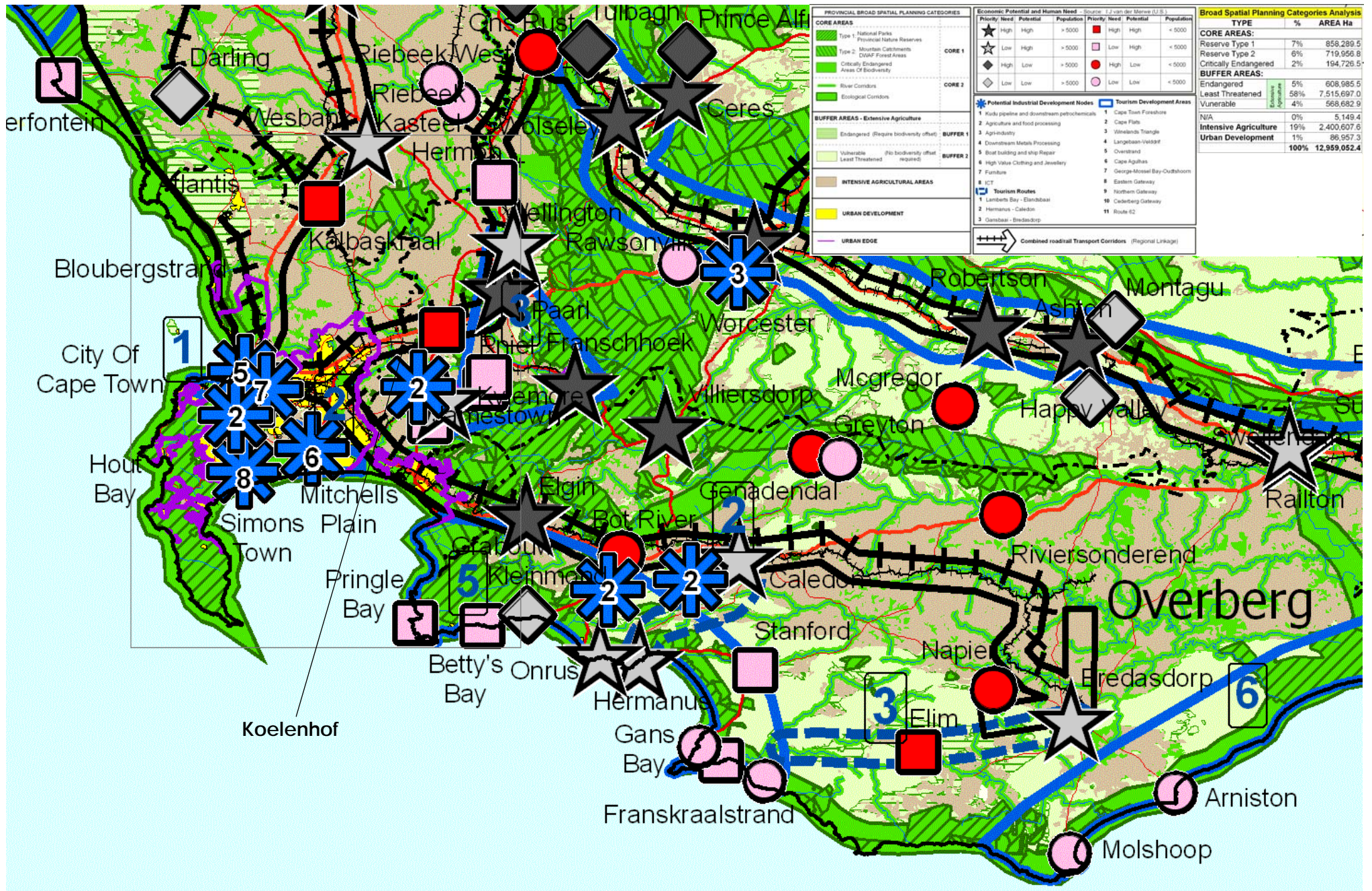


Figure 4.4 Extract from the WCPSDF

4.4 URBAN EDGE POLICY

The following is extracted from the Provincial Urban Edge Guideline dated December 2005. (ref: DEADP, 2005)

An urban edge is a demarcated line to contain, manage, direct and control the outer limits of development around an urban area. The intention of an urban edge is to establish limits beyond which urban development should not occur and to promote urban and environmental efficiency, effectiveness and economy in the interest of all.

The function of an urban edge is three-fold, namely:

- It is a means of restructuring the urban areas and integrating the currently segregated social groups and urban uses;
- It is a growth management tool, used to limit sprawl and the outward growth of urban areas, in favour of densification and infill development, to ensure the more efficient use of resources and land within the urban area; and
- It is a conservation tool, used to exclude certain elements of the environment from the urban area, in order to protect or preserve it, or to discourage its development in the short and medium term, while the long term implications are uncertain.

Urban development includes all development of land where the primary use of the land is for the erection of structures. Residential estates on farms and golf estates would for this purpose, if located outside the urban edge, be defined as urban uses, albeit that the "primary use" is "agriculture" or "private open space" and the "secondary use" is residential.

Agricultural uses, open space uses, conservation areas, transport zonings (excluding public transport interchanges, ranks and stations that consist mainly of buildings) and many similar use zonings refer to the use of the land rather than buildings erected on the land in order for the use to occur. These are non-urban uses

Smallholdings used for bona fide agricultural purposes would or should typically be excluded from the urban area by delineation of an urban edge.

Golf courses, polo fields and other sporting facilities with low intensity structural development are seen as rural in nature, whereas a golf estate, i.e. a golf course with housing, is an urban use, unless it is a resort. Agricultural estates, i.e. farms with a large residential component for owners or shareholders (as opposed to bona fide labourer's residences) or for unrelated freehold or sectional title ownership are seen as urban if the density exceeds one unit per ten hectare.

The following issues, criteria and factors are regarded as informants when considering urban edges for the urban areas:

- Services infrastructure (barrier effect);
- Services infrastructure (capacity and reach);
- Vacant! under-utilised land in urban area;
- Availability of developable land in urban area;
- Higher order roads, access routes and transport infrastructure;
- Cadastral boundaries of adjoining land units;
- Growth requirements over predetermined period;
- Land use applications for new development;
- Visual impact;
- Cultural! heritage resource areas;
- Ownership of land and existing land use rights;
- Informal settlements;
- Urban agriculture and small scale farming;
- Bio-regional spatial planning categories (core and buffer); and
- Density policy for residential development in rural towns.

Given the criteria, issues and facilities for determining urban edges, urban edges should be determined to:

- Exclude prominent landforms and environmental character areas from the urban area;
- Exclude valuable soils for agricultural purposes;
- Exclude valuable soils for mining purposes;
- Exclude surface and ground water resources that could be used to produce potable water;
- Exclude surface and ground water features;
- Exclude ecological resources and establish suitable; ecological corridors to link resource areas;
- Exclude all statutorily declared, proclaimed and protected natural areas;

- Exclude high intensity use and high potential agricultural resources and activity areas;
- Exclude scenic routes and routes of tourism significance;
- Exclude cultural and heritage resource areas and sites;
- Exclude areas that have visual sensitivity, skylines, mountainsides, ridgelines and hilltops; and
- Exclude the WCSDF defined core areas.

Implications for Koelenhof

In the case of Koelenhof the following informants, amongst others will play a critical role in the determination of the urban edge.

- Agricultural land: currently farmed land, high potential agricultural lands, agri-processing (e.g. wine tasting facilities, restaurants and guesthouses);
- Rivers and floodplains: 1:50 year flood plain, 1:100 year floodplain and the 30 m buffer zone around river corridors;
- Heritage aspects such as landscapes, viewsheds, rural landscapes and gateways;
- Topography: major topographical features, e.g. Hills, ridgelines and focal points; Visual or aesthetic quality or scenery, slopes;
- The policy plans for desired direction and pattern of growth.

See also Section 3.4 above.

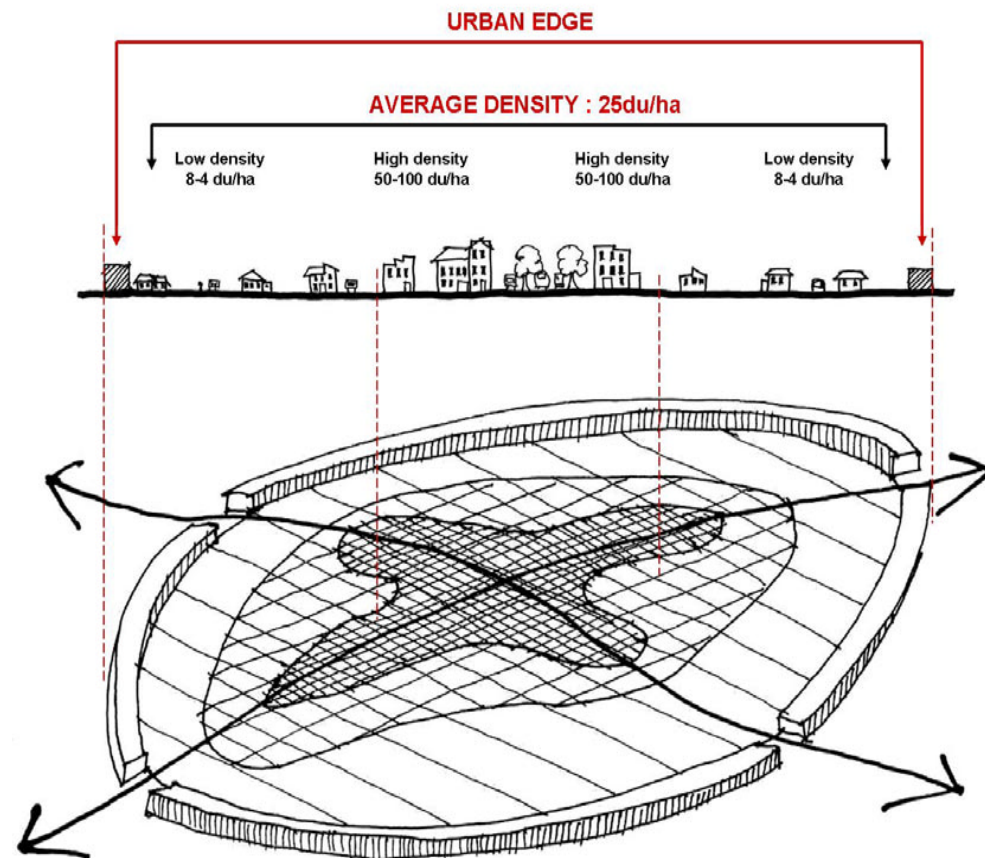


Figure 4.5 Density and the Urban Edge Concepts

4.5 CAPE WINELANDS DISTRICT MUNICIPAL SPATIAL DEVELOPMENT FRAMEWORK (ref: MCA, 2003)

This SDF covers the Breede River, Winelands, Breede Valley, Cape Winelands, Drakenstein, Stellenbosch and Witzenberg Municipalities.

The planning principles of the National Spatial Development Perspective (NSDP) are to be utilised in the spatial development of this area. The authors conclude that the desired future spatial form of settlements in the Western Cape are to be achieved by a balanced distribution approach. In this regard they note that development should instead be encouraged, subject to control, in the south-eastern part of the Cape Winelands District, including the existing towns of Prince Alfred Hamlet, Ceres, Op-die-Berg, Worcester, De Doorns, Rawsonville, Robertson, Ashton, Montagu, Bonnievale, McGregor, Franschhoek, Stellenbosch and surrounds, see Figure 4.6.

The objectives of this SDF are interlinked and provide focus and attention to the challenges facing the municipality. These are mainly:

- conserve and protect the natural environment;
- create a quality settlement system and built environment;
- provide access to existing and new facilities and opportunities; and,
- grow and diversify the economy into new seasons and sectors.

The settlement framework for the district Municipal SDF is composed of a four-tiered typology of settlements. The first or higher order settlement is called the **core** (primary) and these include areas such as Stellenbosch and Worcester. The second level is called **regional** settlements. The third level is called the **rural towns**, and the fourth level, under which Koelenhof is classified, is called the **hamlet**.

The SDF defines hamlets as clusters of homesteads and settlements that are essentially service points. Hamlets are important in areas of limited or less economic development as they are the only possibility of achieving viable markets and services.

Koelenhof is identified as a hamlet with the focus of intense agriculture and that are connected to the hinterland of the Stellenbosch valley and the core settlement being Stellenbosch.

When describing the growth management issues the SDF notes that hamlets face limited urban growth pressure. However, the future expansion of these hamlets ought to be dictated by the same principles as those that guide the rural towns in order to promote the sustainable growth and the independent and unique character of hamlets. These principles are as follows:

- protect agricultural areas;
- stop the undefined spread of housing into natural areas, which affect the character of the town; and,
- respect natural constraints such as flood prone areas.

It is further explained that there are some hamlets where the prospects for added housing is not required or sustainable and these should therefore be avoided.

The SDF notes that in order to promote economic and social sustainability no subsidy housing should be located in hamlets until the future economic sustainability, of the hamlet is established. It also concludes that hamlets should not be encouraged to grow significantly.

However, it should be the preferred site for farm worker housing as opposed to establishing new rural agri-villages. This is because hamlets are located close to farms, have existing services and facilities including infrastructure and therefore reduces capital and maintenance costs.

In considering the hierarchy of services it is noted that the following facilities could be located in hamlets as part of the social, capital investment focus:

- educational facilities: primary schools
- health facilities: mobile clinic stop-point for part-time clinic facilities
- social facilities: mobile library
- public service facilities: mobile post office, mobile police station
- amenities: public meeting space, play lot / ground
- collective service points: public telephone / pay point, public transport point associated with safe schools point

Implications for Koelenhof

It should be noted that Koelenhof does have a primary school, a transport interchange, namely the station, but would require the other services such as mobile clinics, community centre, post office, etc. to be able to service all the needs of its community.

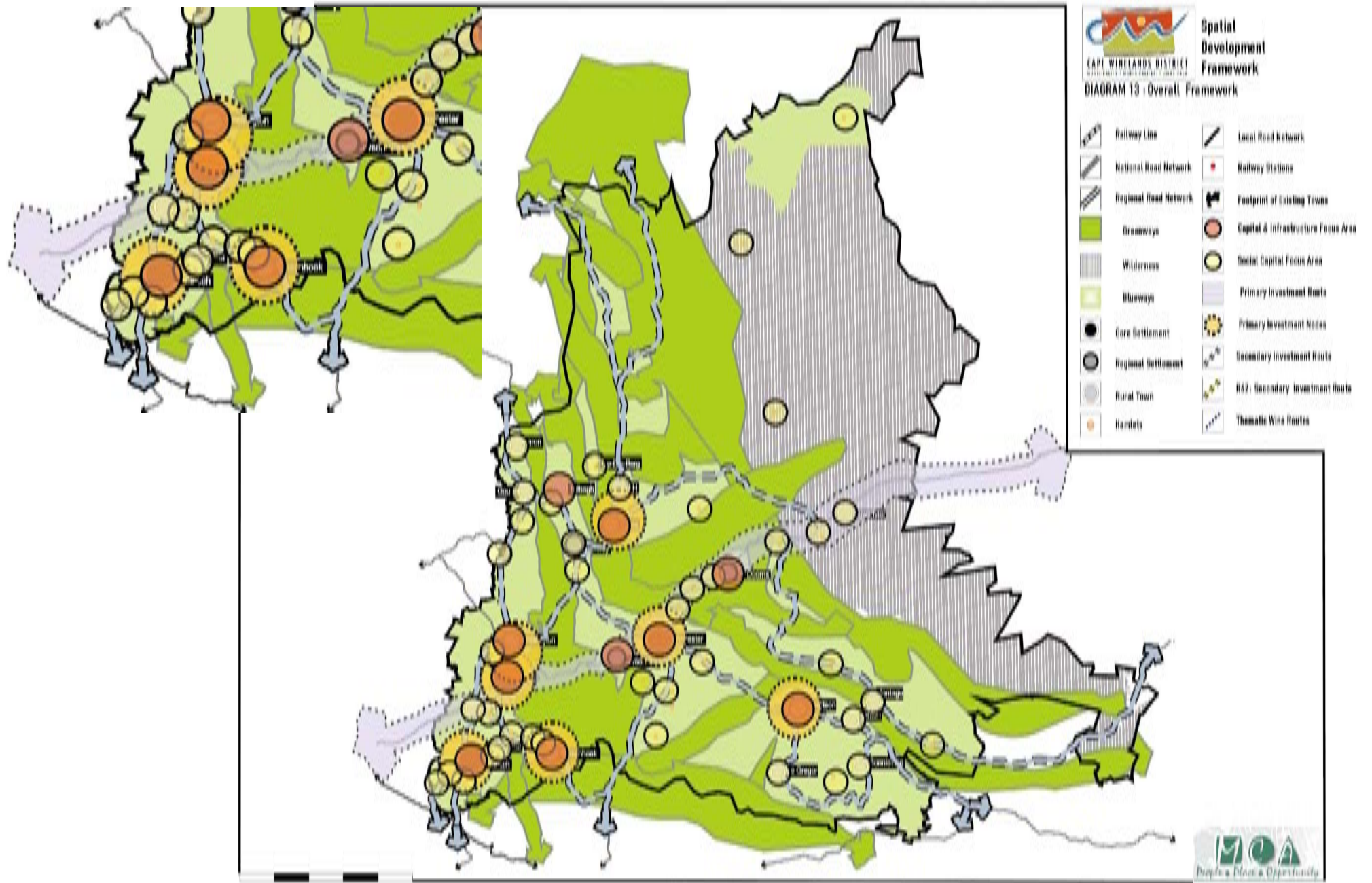


Figure 4.6 Cape Winelands Municipal Spatial Development Framework

4.6 STELLENBOSCH MUNICIPAL SPATIAL DEVELOPMENT FRAMEWORK (ref: CNdV Africa, 2005)

The Stellenbosch Municipal Preliminary Spatial Development Framework was completed in December 2005.

This framework was prepared through a process of using five possible scenarios for the development. The first scenario dealt with accommodating development in the respective areas in the Stellenbosch Municipality in relation to the capacity that has been provided for development in the various SDFs.

Under the first scenario Koelenhof would have sufficient capacity based on in its SDF to accommodate its natural growth.

The second scenario dealt with employment generation, looking at whether there is sufficient provision in areas where employment could be provided based on existing economic activity and for instance, industrial erven. As a result of the attracting force of employment and the related need for accommodating more residents, it was found that the capacity in the SDF for Koelenhof would be insufficient.

The third scenario proposes to focus all of the growth in the municipality onto those settlements that are located on major road routes including Koelenhof. Again, in this scenario Koelenhof SDF does not have capacity sufficient for the necessary growth that will be focused to it as per this scenario.

Scenario Four focuses all of the future growth in the municipality on those settlements that are on major rail corridors including Koelenhof. Once again, the SDF does not provide sufficient capacity to accommodate this scenario.

The last scenario focuses all of the growth on the three main growth nodes namely Stellenbosch, Franschhoek and Klapmuts. In this scenario Koelenhof is excluded.

The SDF concludes that the desired areas to accommodate the growth it notes in its final composite plan that an existing SDF in Koelenhof would have to be revised and that the future role of Koelenhof in relation to Stellenbosch needs to be determined. This revision and study must take

into account the impact of the approved industrial rights at Koelpark which appear likely to be taken up in the market, see Figure 4.7.

This Municipal SDF uses the broad spatial planning categories, namely the core zones, the buffer zones, and the agricultural zones and proposes the delineation of urban edges to help with development control.

The SDF further requires that the bioregional planning zones be confirmed and further investigation in this regard be initiated at a local level.

Out of this SDF it is also noted that the main arterial roads connecting the major settlements in the surrounding region play a key role in establishing the municipality's sense of place because of the views that they offer, the experience of travelling along them and the nature of their detailed design. Therefore, these roads should be treated carefully and their designs kept in a sensitive way to reduce traffic skids, retain their winding nature and fully maintain their surface treatments and curvages in order to promote tourism and keep their scenic beauty.

The SDF also proposes that architectural, urban design and landscape guidelines be prepared and promoted for all areas in the municipality.

A concern that is noted in the municipal SDF, is the future of on-farm settlements and the possible pressure as a result of people moving off farms. In this regard Koelenhof, being an agricultural and farming hamlet, will increasingly be subjected to this possible pressure to provide accommodation for people who are moving off farms.

Lastly, it notes with concern that not much progress has been made in terms of land reform for the areas in this municipality.

Implications for Koelenhof

- Koelenhof is well located as an area with growth potential which should be understood in tandem with that of Stellenbosch town.
- Its location on the suburban commuter rail system, together with its station suggests that it be functionally, linked to Stellenbosch as a "seventh" station Lynedoch including (Vlottenberg a new Papegaaiberg station, Stellenbosch station, du Toit station, new Cloeteville station and Koelenhof).

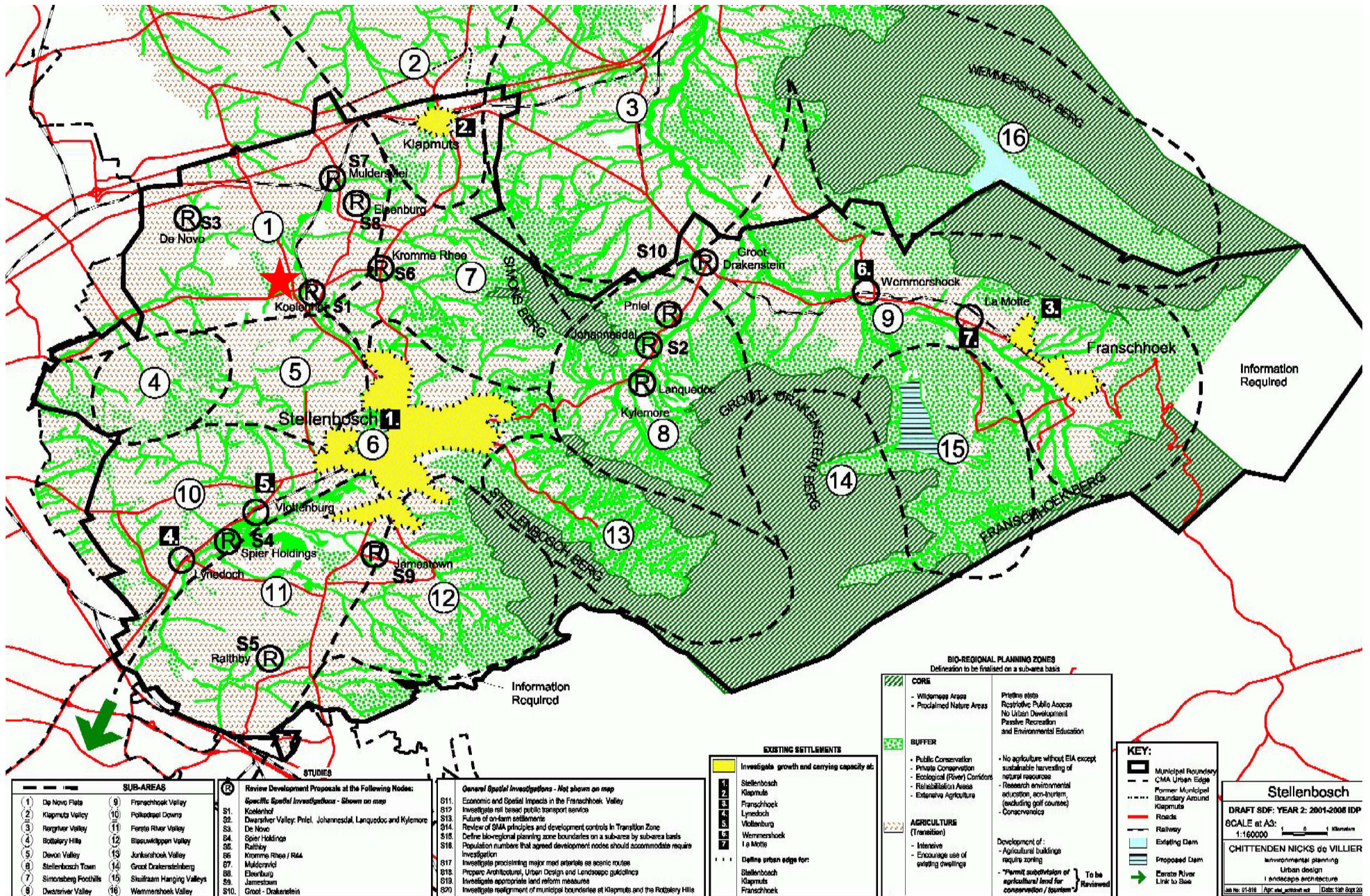


Figure 4.7 Stellenbosch Municipal Spatial Development Framework

4.7 STELLENBOSCH INTEGRATED DEVELOPMENT PLAN

Issues	Priority
Housing and Land for Housing	1
Unemployment/ Job Creation	2
New Municipal Services	3
Law Enforcement and Public Safety	4
Business Opportunities and LED	5
Traffic Calming	6
Sports Facilities	7
Management: Open spaces and parks	8
Water and Sanitation	9
Public Transport	10

Table 4.1 IDP Ward 11 Priorities

Issues	Priority
Housing and Land for Housing	1
Unemployment/ Job Creation	2
Law Enforcement and Public Safety	3
Primary Health Care	4
Sports Facilities	5
Business Opportunities and LED	6
Youth/ Women Empowerment Programs	7
Multi-purpose Community Centre	8
Conservation (natural)	9
Conservation (urban and especially historic)	10

Table 4.2 IDP Municipal Wide Priorities

Koelenhof is situated within Ward II of the Municipality.

It is clear from the ward as well as the Municipal wide priorities that "housing and land for housing" is top priorities. The second priority in both instances again is job creation to deal with the high levels of unemployment.

Law enforcement and public safety enjoys the fourth and third priority positions on the Ward and Municipal wide priority lists, respectively.

The third priority for the Ward is new municipal services.

Figure 4.8 Stellenbosch Integrated Development Plan

4.8 KOELENHOF NEIGHBOURHOOD AREA AND RURAL SETTLEMENT SPATIAL DEVELOPMENT FRAMEWORK

The Koelenhof Neighbourhood Area and Rural Settlements (reference DMP, 2001) Draft Spatial Development Framework motivates for the development of a rural hamlet at the intersection of the R304 and the M23.

This SDF highlights the main role of Koelenhof as that of agriculture that the ecological sensitive areas need to be conserved such as the fynbos and water courses traversing the neighbourhood.

It also notes that the Koelenhof has tourism potential; that the Koelenhof Neighbourhood Area (see Figure 4.10) should be used predominantly for agriculture. It concludes that Koelenhof should enhance agriculture production and tourism while addressing the socio-economic needs of the resident community.

The SDF lists the following neighbourhood area issues and proposes objectives to address these:

1. Protection of natural features of ecological, aesthetic and cultural value to the Koelenhof neighbourhood area.
2. Protection of heritage resources
3. Maintenance of soil potential
4. Prevention of environmental pollution
5. Settlement patterns that maintains the aesthetic quality of the Koelenhof neighbourhood area
6. Retention of productive agricultural land
7. Protection of scenic quality and character of rural areas
8. Adequate access to appropriate community facilities
9. Community facilities contributing to structure, character and amenity of urban place
10. Adequate access to housing
11. Creation of quality living environments in the provision of housing
12. Transportation system catering to access needs of Koelenhof community while supporting economic development
13. Transportation systems that maintain community of neighbourhood area
14. Efficient and appropriate provision of utility infrastructure
15. Maintenance of environmental quality in the provision of utility infrastructure

The draft spatial framework identifies areas for conservation, agriculture, special management areas, urban developments, provides proposals in regard to urban design farm settlements and tourism related development, transport systems; community facilities, commercial development and local economic development.

The vision of the rural settlement (hamlet) at Koelenhof as opposed to the Koelenhof Neighbourhood Area, is as follows, see Figure 4.11:

- i. Koelenhof is an agricultural area and is has to sustain this agricultural character; with a strong emphasis on conservation.
- ii. Any housing should first satisfy the needs of the Koelenhof Node inhabitants;
- iii. A tourism element(s) for this node should be provided.
- iv. A sport facility for this neighbourhood area's inhabitants should be developed.
- v. Koelpark Industrial Park's existence is accepted, but no further industrial expansion should be accommodated.
- vi. Landscaping should be a co-ordinated effort and encouraged.

The spatial framework for the settlement at Koelenhof provides for open space systems, community facilities, such as institutional sites, including the place of safety, sports opportunities, skills development center, agricultural market, tourist facility as well as for movement systems, industrial and commercial development, residential development and bulk services. This section of the SDF also provide proposals relating to urban and landscaping design.

The SDF plan for the hamlet concentrates the development around the intersection of the R304 and the M23.

The Development Master Plan for Koelenhof Hamlet provides for 162 subsidy housing units located around the station and north of the Lindelani place of safety on Farm 74 portion 23, see Figure 4.10.



Figure 4.9 Koelenhof Hamlet – Preliminary Master Plan

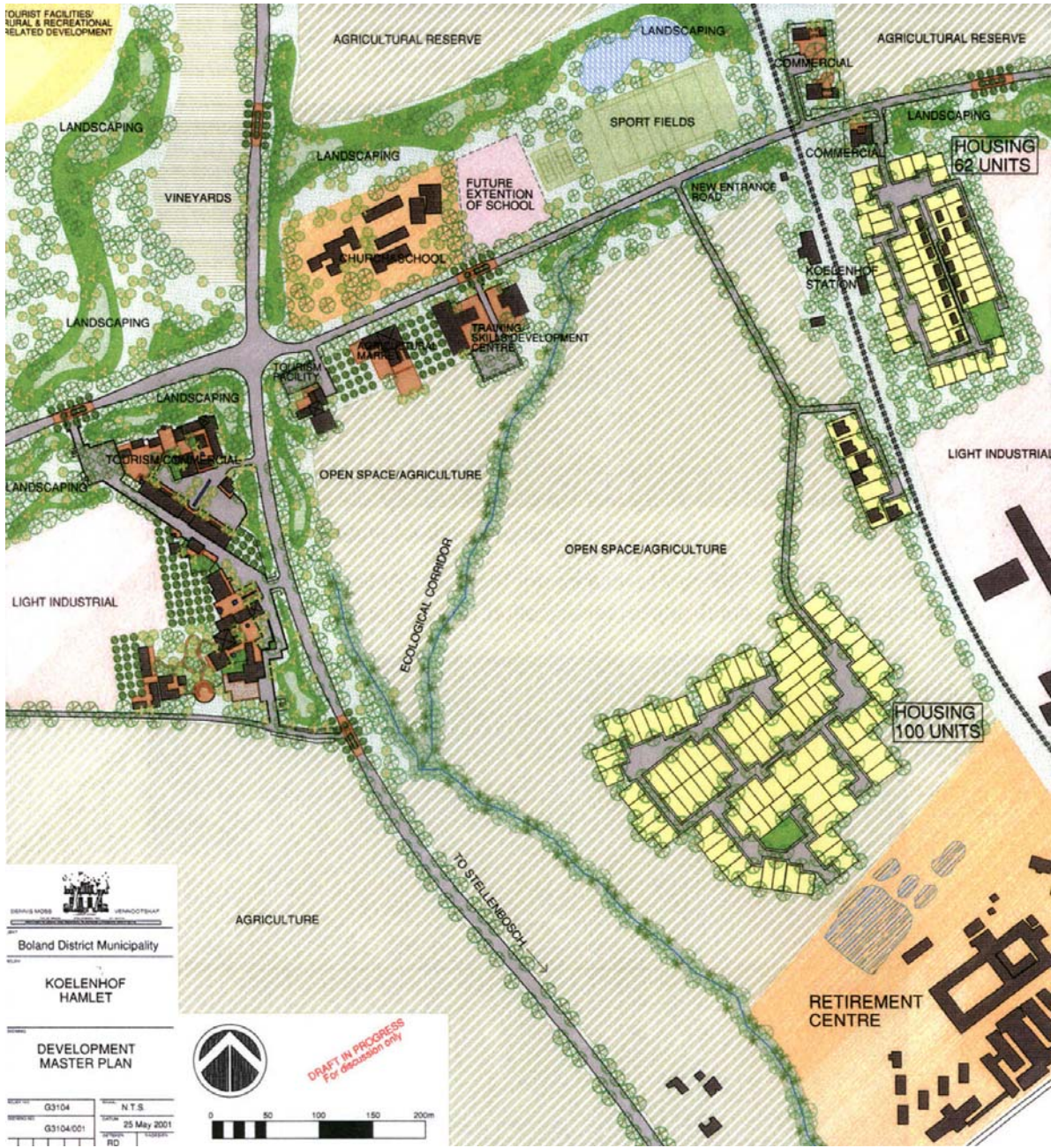


Figure 4.10 Koelenhof Hamlet – Development Concept Master Plan

5. ANALYSIS

- 5.1 Socio Economic Characteristics
 - 5.1.1 Population
 - 5.1.2 Housing Waiting List
 - 5.1.3 Farm Settlements
 - 5.1.4 Poverty, Income and Employment
 - 5.1.5 Population Age
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- 5.2 Natural Environment
 - 5.2.1 Geology and Soils
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- 5.3 Built Environment
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- 5.4 Summary of Key Issues

5.1 SOCIO ECONOMIC CHARACTERISTICS

5.1.1 Population

5.1.2 Housing Waiting List

5.1.3 Farm Settlements

5.1.4 Poverty, Income and Employment

5.1.5 Population Age

5.1.6 Level of Satisfaction

5.1.7 Summary of Statistics

5.1 SOCIO ECONOMIC CHARACTERISTICS

Note: Koelenhof is not a distinct separate census entity according to the statistics census information and therefore the census information cannot be used to extract demographic information for Koelenhof. However a survey was conducted as part of the preparation of the 2001 SDF (DMP, 2001) and revealed amongst others the following information:

5.1.1 Population

2001	2007	2017	Growth rate
1794	2103	2640	2,3% per annum

Table 5.1

Table 5.1 reflects the population increase for Koelenhof. This increase is based on the population surveyed as part of the previous SDF (DMP, 2001) during 2001 using an estimated growth rate of about 2.3% per annum which is the average growth rate for settlements in Stellenbosch (CNdV, 2005).

The above means that by 2017 the population at Koelenhof would have increased by 846 people. Therefore, the proposed SDF needs to make provisions for a conservative increase of 846 new residents under the current circumstances. Experience in Klappmuts, a similar type of settlement in the municipality, has shown that if the conditions for development improve that the growth rate may accelerate and that the population increase will be significantly more.

5.1.2 Housing Waiting List

The current Municipal housing waiting list for Koelenhof (pers.com Mr Lester van Stvel, Stellenbosch Municipality)- records 140 households. Using a growth rate of 2,3% this would mean that approximately 250 units would be needed by 2017. If the ideal average density of 25du/ha is applied to the 250 required units it would mean that a nett area of approximately 6,5ha would be required to accommodate on the current and projected future waiting list. However, concerns have been expressed by individuals in the community that the actual housing demand may be much higher than the 140 that is currently on the housing waiting list.

5.1.3 Farm Settlements

It is noted that a relatively high number of farm settlement buildings are within the SDF study area. This number is approx 504 based on the 2001 survey and includes approx 476 households on farms.

5.1.4 Poverty, Income and Employment

Relatively high levels of poverty is expected to prevail in the area as a result of the fact that 94% of the households surveyed during 2001 earned less than R3500 pm. The majority of the people surveyed in the study area, approx 42%, are employed in the wine industry. This is followed by transport that employs 37% of the people. The transport industry includes crane operators, forklift operators, petrol attendants majority is truck drivers. See Table 5.2.

5.1.5 Population Age

These statistics also reveal that the majority of the population is about 20 years old, 41%. This is characteristic of a fairly young population.

Between 16 - 19 % of the population are in the 30 – 39 years old category. This is followed by the 5 – 9 year olds, 12%, and the 40-49 years olds, 11%. 35.5% of the population is in the 50-60 year old category, approximately 600 people. Ageing is likely to result in approximately 600 more people would be in the 60+ category over the next 20 years.

5.1.6 Level of Satisfaction

As part of the 2001 survey done in preparation of the SDF (DMP, 2001) an assessment of satisfaction have revealed that 40% indicated that they were satisfied to very satisfied. 39% indicated that they were unhappy to very unhappy and 21% indicated that they were neutral. 84% of the people surveyed indicated that they want to own land for housing.

5.1.7 Summary of Statistics for the Koelenhof Neighbourhood Study Area (DMP, 2001)

- 376 households on farms; 49 on non farming areas (Koelpark, etc)
- 276 on farm settlement buildings.
- 1794 people at 2001: 51,5% female and; 48,5% males

- 41% younger than 20 years
- 10% pre-school age
- 21% primary school age
- 10% secondary school age
- 56% in AIDS risk age (15-39)
- 45% had primary school education
- 21% had higher school education
- 93% of households earned less than R3,500 pm.
- 6% were unemployed (pensioners, housewives, etc)
- 85% were employees.
- Majority of people (42%) employed in wine industry
(DMP – Koelenhof Neighbourhood and Rural Settlement SDF)

Industry	Head of Households	%
Wine industry	263	42
Domestic Industry	30	5
Professional	6	1
Building Industry	13	2
Hotel Industry	13	2
Security Industry	11	2
Transport	231	37
Manufacturing	12	2
Not Econ Active	45	7
Total	624	100

Table 5.2

It is proposed that a new survey be done to correlate these estimates and assumptions.

5.2 NATURAL ENVIRONMENT CHARACTERISTICS

- 5.2.1 Geology and Soils
- 5.2.2 Water Resources Hydrology
- 5.2.3 Topography and Height
- 5.2.4 Slope Analysis
- 5.2.5 Aspect Analysis
- 5.2.6 Biodiversity / Vegetation
- 5.2.7 Land Capability for Agriculture
- 5.2.8 Mining

5.2.1 Geology and Soils

The characteristics of geologic materials reflect the processes that form them and the environments in which they form. It is important that buildings and structures are designed and located giving regard to the types of soil conditions and its associated characteristics.

Sediments are mostly bits and pieces of older rock that have been transported by wind and water to accumulate on beaches and in sand dunes, on lake and river bottoms and on ocean floors. When these sediments are cemented together over time they form sedimentary rocks such as sandstone and shale. Young sediments that have not been converted into rocks are called alluvial and these include sand or stream deposits.

The geological surveys for the area prepared by Geological Surveys (1990) indicates, as shown in Figure 5.1, that the area has:

- Loam (Qg) and sandy loam (Qg) sands
- Brick clay (CS)
- Kaolin (CK) materials
- Silcrete (Qg)
- Ferricrete (Of)
- Klipplaat (Nk) of the Malmesburg group and the swartland terrain formation
- Greywacke, phyllite and quartzitic sandstone interbedded with lava and tough are also found in the south eastern sections of the study area and along the south western areas.
- Piekenierskloof (Op) of the Table Mountain Group and the Cape Super Group. The latter is found along the river systems.

The same geological survey map also indicated that there were four brick clay mines operating in the area at the time of mapping (1990).

What is also notable from this map is the old roads pattern where the M23, as we know it now, has not yet been developed.

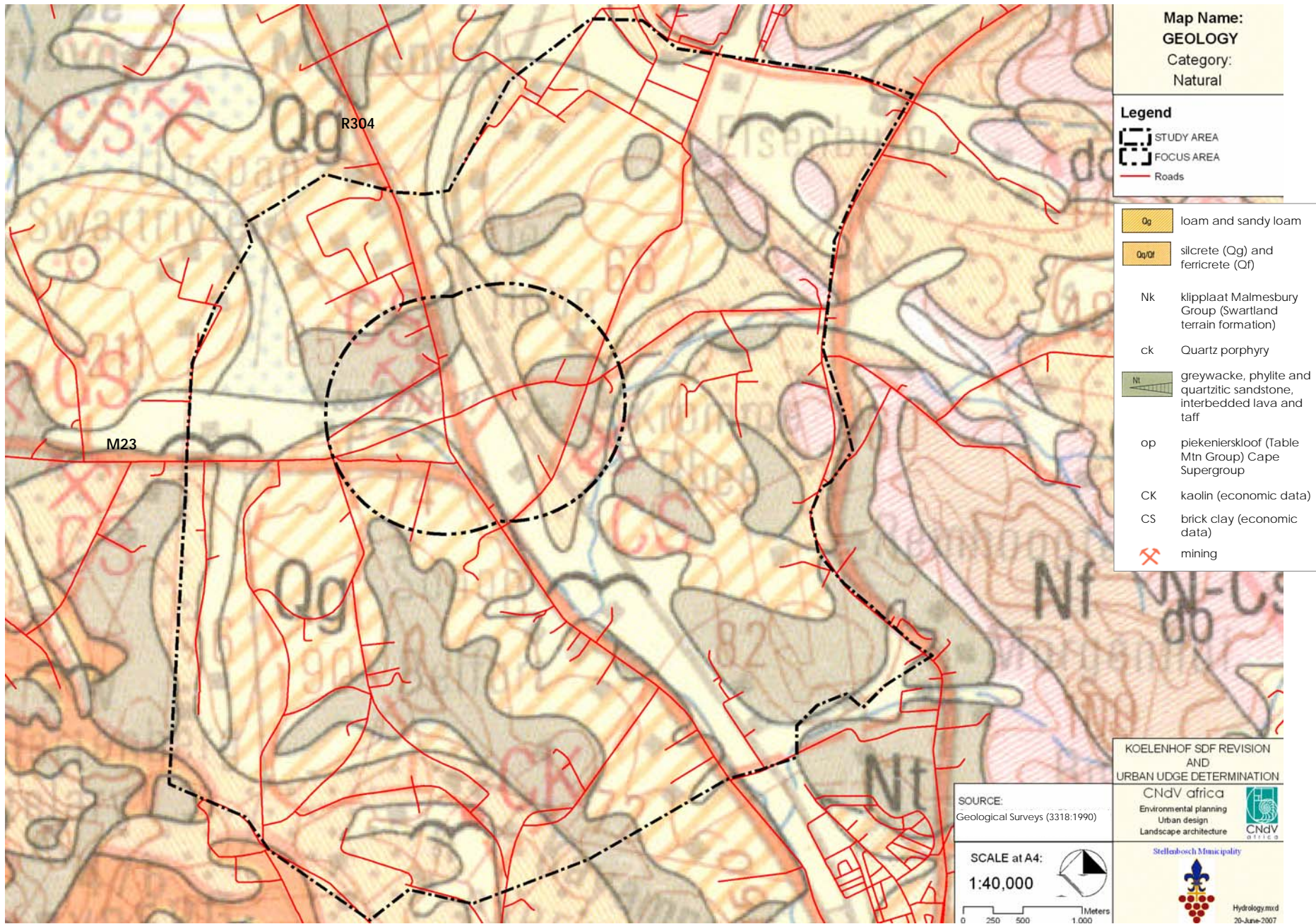


Figure 5.1 Geology

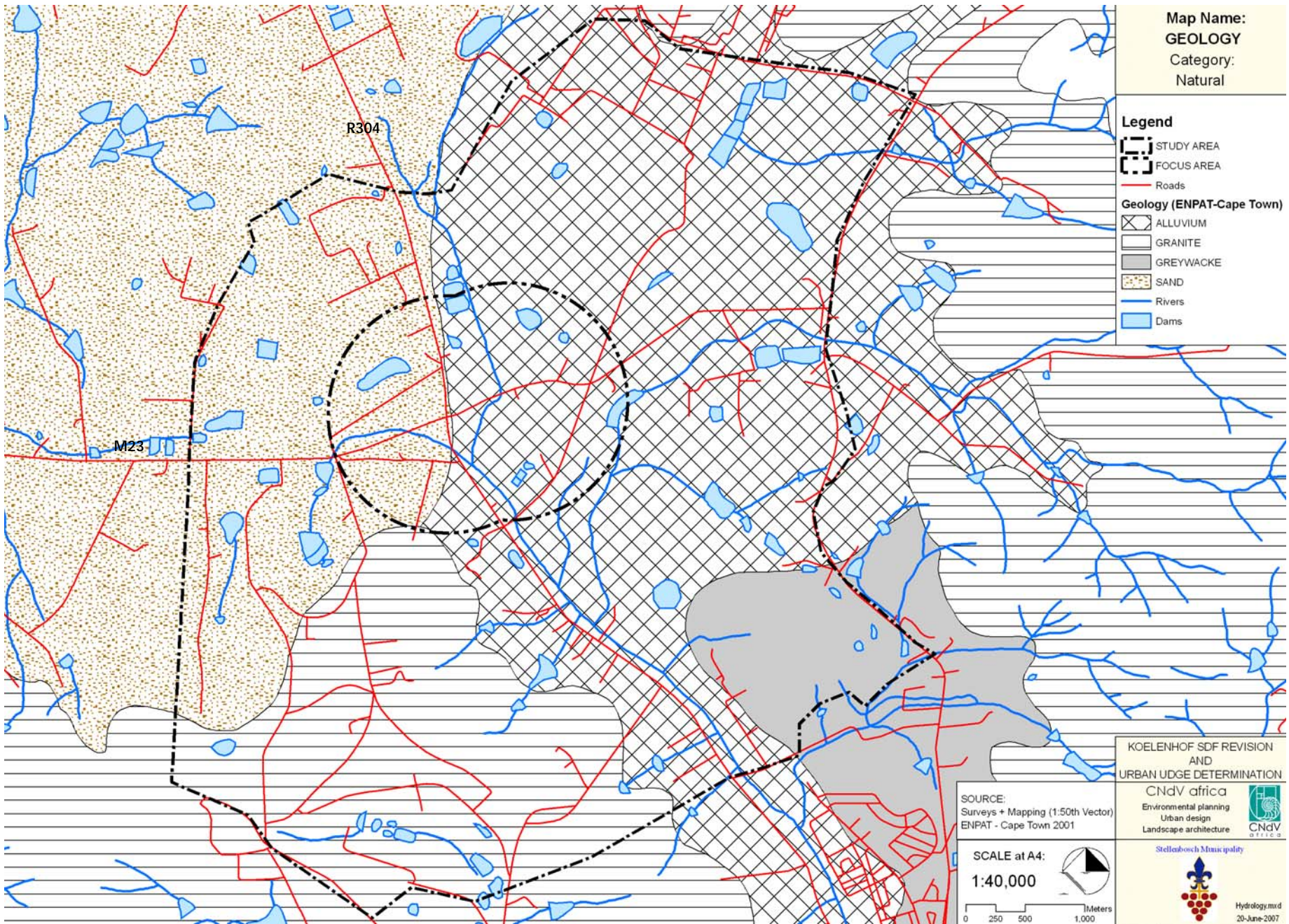
Figure 5.2 indicates that the study area is generally covered by four types of geology.

The north-western quadrant of the study area is covered by a sandy type of geology loam (Qg) and sandy loam (Qg).

The southern area of the study area is covered by granite. The granite is the stronger or more rocky of the four types of formations found in the study area.

The south-eastern corner of the study area that forms part of the Simonsberg Mountain Range is covered by greywacke phyllite, and quartzitic sandstone.

The remainder of the study area (eastern) generally along the river system and the north-eastern quadrant of the study area are covered by alluvial types of soils.



5.2.2 Water Resources - Hydrology

The Plankenbrug River, which is a tributary of the Eerste River, flows in a south to north westerly direction generally parallel with the eastern side of the R304 until just south of the R304 and the M23 where it splits into two.

One of the tributaries goes westward across the M23 and then south across the M23 towards Devon Valley Golf Course. The other goes in a north easterly direction parallel to the railway line immediately east thereof.

Also noticeable from the river system is a number of tributaries leading from it, particularly one going in an eastern direction immediately south of the focus area and towards the Kromme Rhee.

There are a number of waterbodies observable in the study area some of which represent farm dams and a number of others which are part of the river system.

The pattern of river systems overlain with the previous diagrams, Figures 5.1 and particularly 5.2, corresponds with the types of soils that are found in the eastern portion of the study area. These soils being mainly river type alluvial soils.

A major portion of land in the focus area, north of the second access road to Koelenhof and South of the M23 appears to be prone to regular flooding. In this regard it is required that the exact floodline of the Plankenbrug River be determined to forewarn, in the case of floods, and to indicate appropriate development and flooding / conservation areas.

It is therefore important when looking at the pattern and river systems in the area that these rivers are protected as ecological corridors as they form the basis of ecosystems in the area, provide water resources for opportunities and therefore stimulate the possibilities of life in the area.

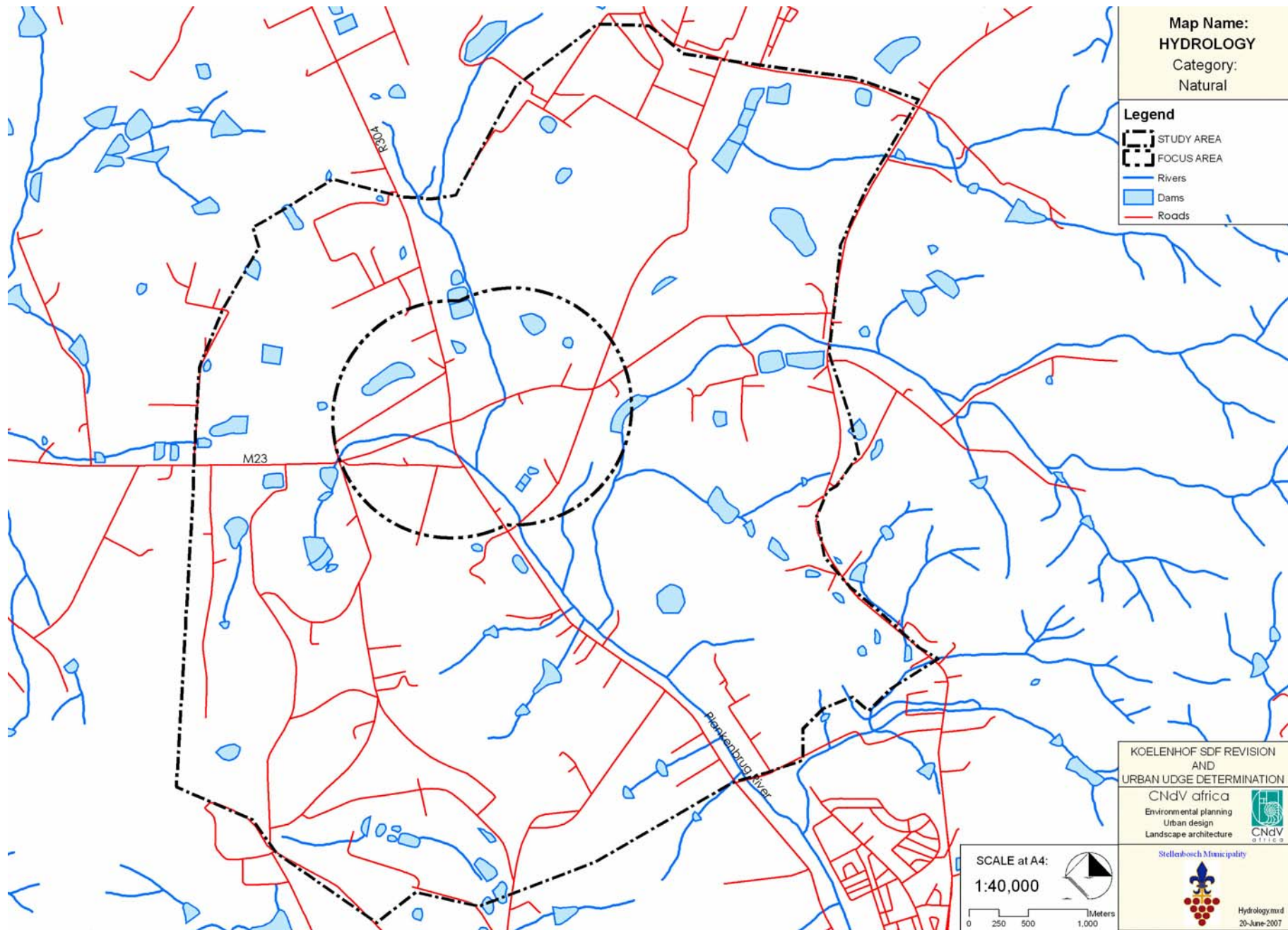


Figure 5.3 Hydrology

5.2.3 Topography and Height

Figure 5.4 provides an indication of the topography of the study area.

The map shows low lying areas of up to 150m above sea level along the river, main road and rail corridor system, from the southern to north-western directions, i.e. from Stellenbosch to the R304 and also in a western direction along the M23.

The above areas represent the lower lying areas in the study area. The southern to north-western corridor is generally about 1km wide and about 750 to 500m wide in the western direction.

The Simonsberg Mountains on the eastern boundary of the site rise much higher, between 300m and 500m. The Bottleray Hills are on the south western corner of the site.

Other lower peaks are observed from this topography and heights diagram in the north-western and north eastern quadrants of the study area.

The lower areas of the study area surrounded by these peaks and mountain ranges create a developable area in the shape of a bowl around the Koelenhof Intersection and focus area.

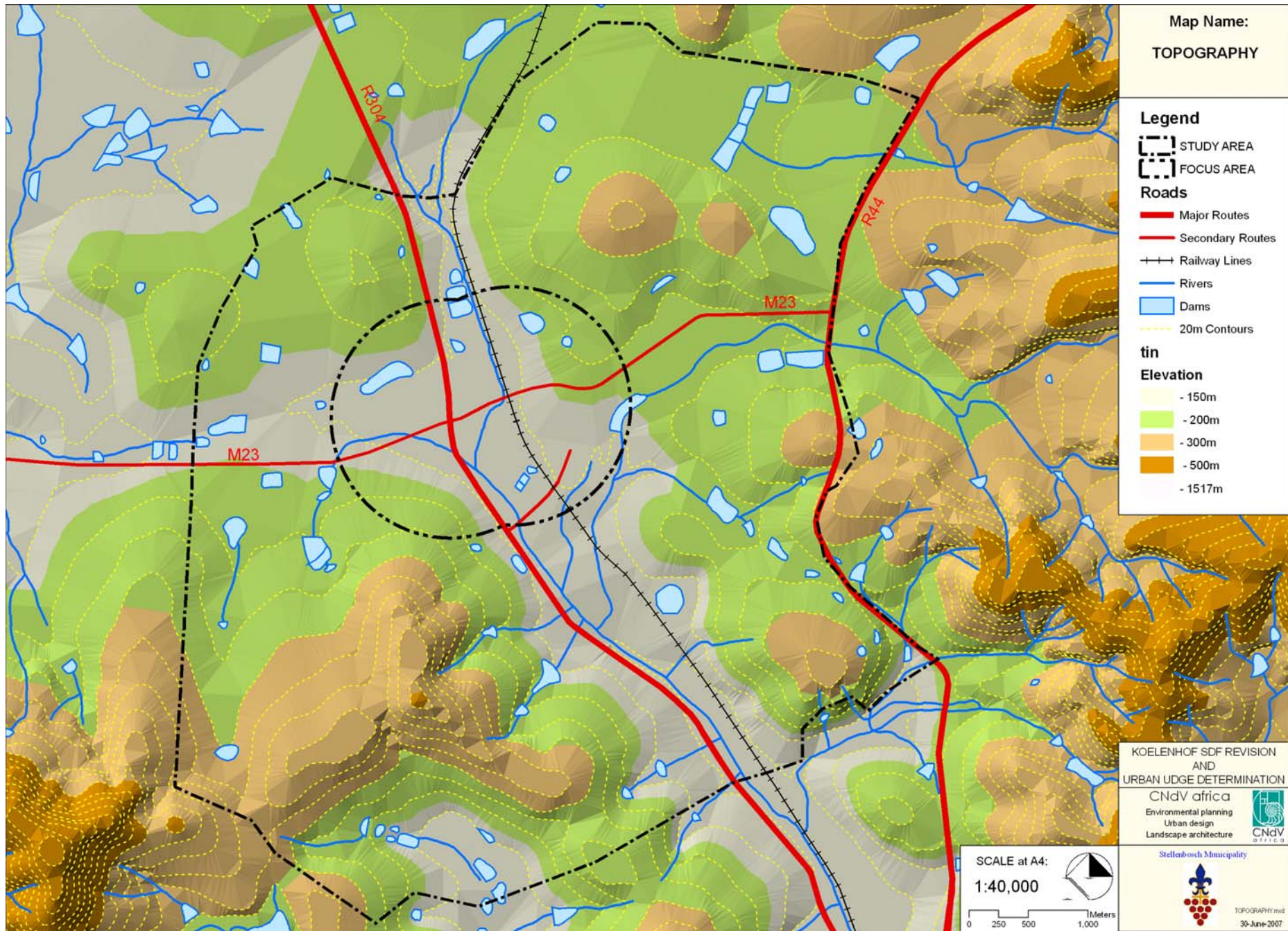


Figure 5.4 Topography and Height

5.2.4 Slope Analysis

Figure 5.5 illustrates the different slopes in the study area.

The gradient or slope of an area influences the ease of construction, i.e. the steeper the slope (closer to 1:1) the more difficult the construction, the flatter the slope (1:20+) the easier it becomes.

The slopes classification for the study area is divided into four categories 0 -1:20 (0 – 5%).

Slopes of greater than 1:4, which is not ideally suited for low income housing, is found on the Simonsberg Mountain areas and the south eastern and south western corners of the study area.

The area within the focus area around the intersection of the M23 and the R304 has slopes of about 0 – 5% or 0 to 1:20. This indicates that the focus area is relatively flat.

The predominant slope in the study area is in the category of 0-15% or 1:6,6.

The south western corner of the study area along the peaks of the Bottleray Hills has slopes in the 1:6,6 to 1:4 (15% to 25%) category.

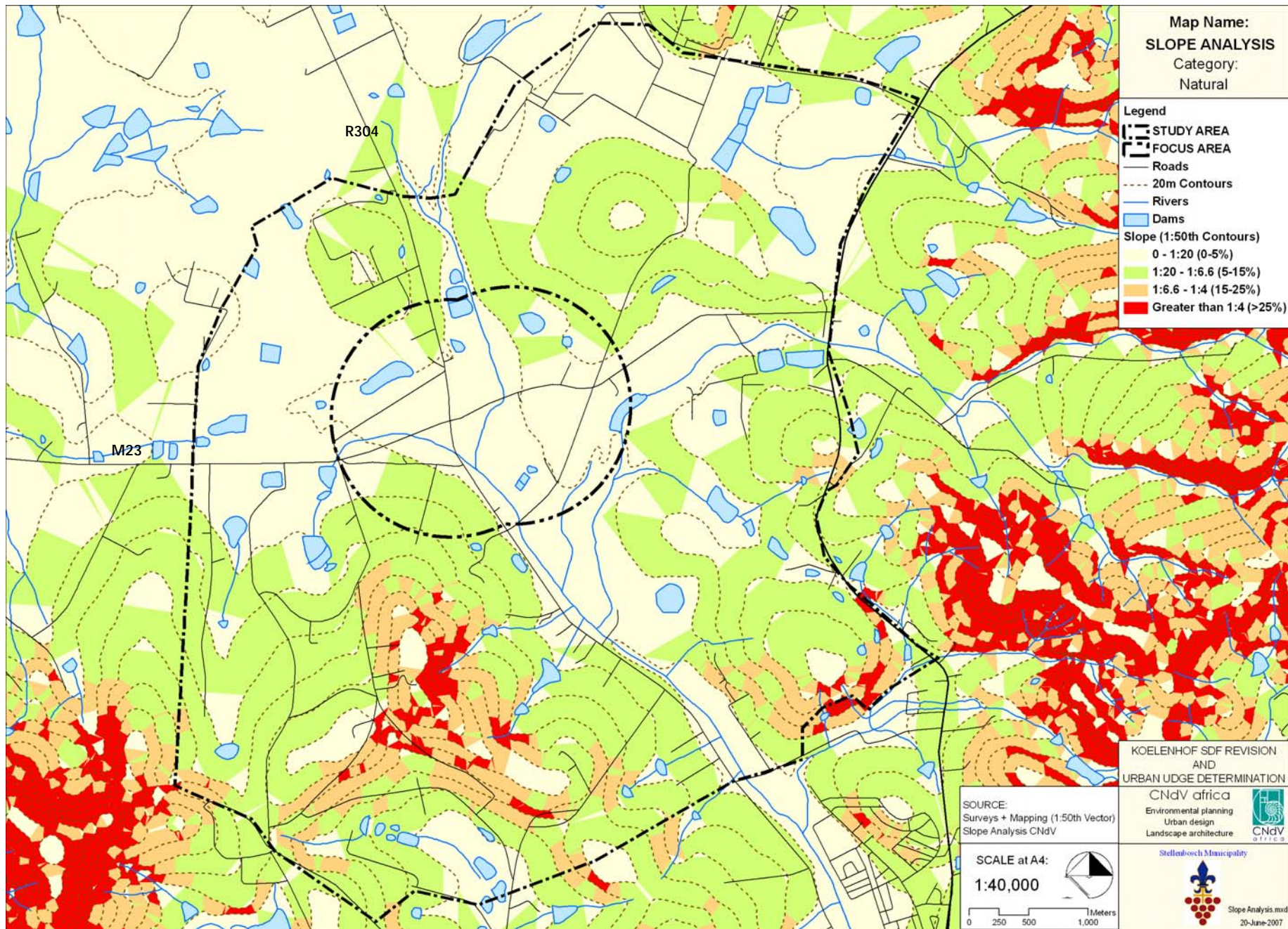


Figure 5.5 Slope Analysis

5.2.5 Aspect

Figure 5.6 illustrates the aspect of the different slopes in the study area.

The aspect of the study area is divided into 5 categories:

- Flat
- North
- East
- South
- West

As can be expected, given the topography the greater portion of the focus area is relatively flat along the river corridors which, it assumed, gave rise to the location of the main roads and railway line.

Figure 5.6 also shows that the northern slopes most suitable for development are found in the south western corner of the focus area. The south facing, more colder slopes, are found in the east and north west of the study area.

The Bottelary Hills in the south western corner generally has east and north facing slopes with limited west facing slopes.

The south eastern corner of the study area, generally has south and west facing slopes with limited north facing slopes.

The areas north of the M23 are generally west and south facing with limited north facing slopes.

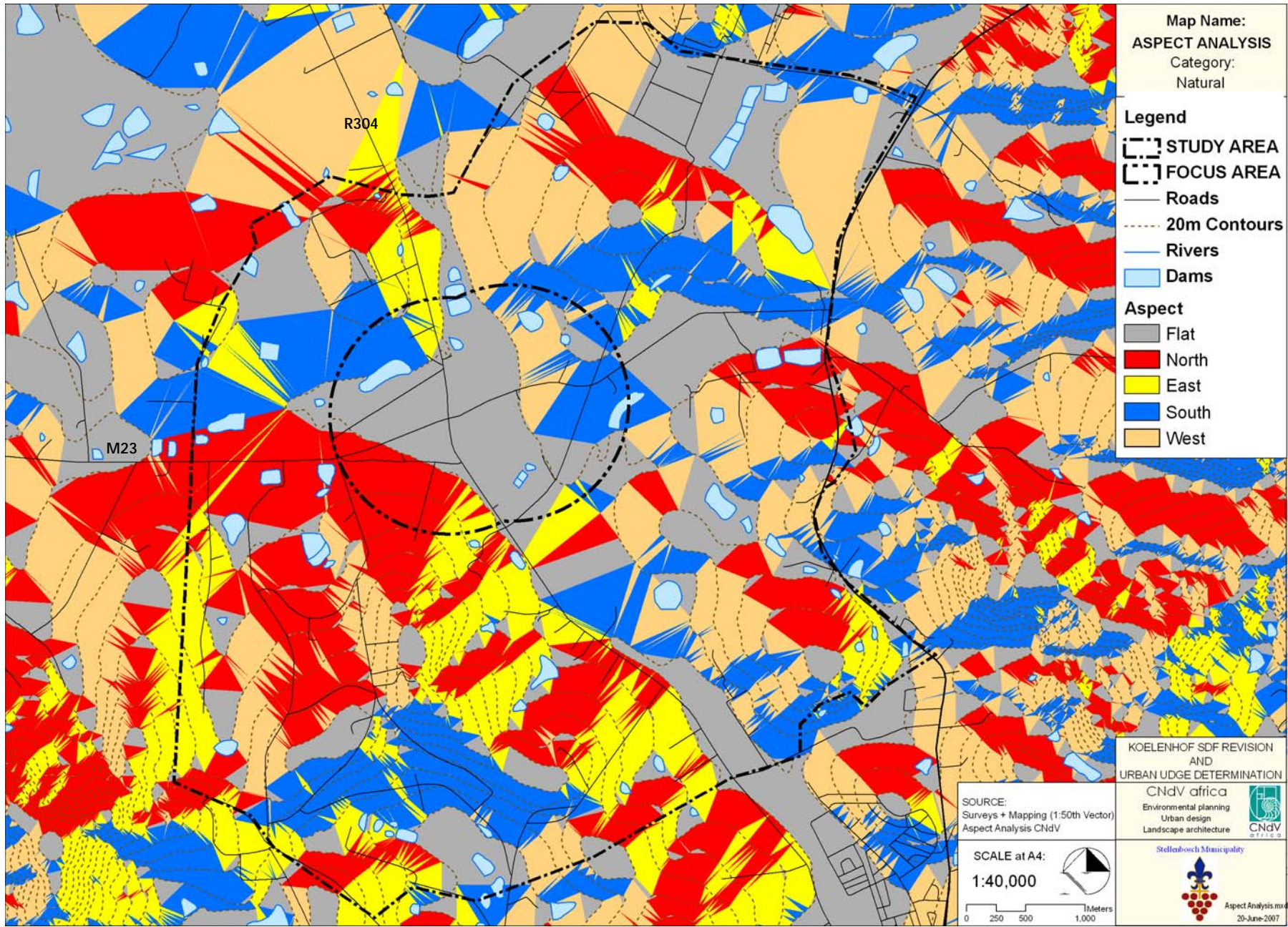


Figure 5.6 Aspect Analysis

5.2.6 Biodiversity/Vegetation

This broad biodiversity map extracted from vegetation of the study area in the national mapping atlas, Enpat, illustrates a major portion of the study area is covered by cultivated land.

Note: This layer covers also areas that are currently developed for urban uses.

The overall vegetation mapping also indicates a portion of fynbos in the southern tip of the south western quarter of the study area. The eastern edge outside of the study area indicates renoster shrub veld, and fynbos.

As fynbos and renosterveld are sensitive vegetation type these areas, in the study area, have to be protected against urban development and other forms of possible degradation.

Both of these areas to be conserved and protected even though the major portion fall outside of the study area.

Other than the small areas of fynbos and the minor portion of renosterveld in the study area, no other botanically sensitive area identified for the study area.

The trees in the study area, along the second access road to Koelenhof, south of the M23 and along the M23 are generally acacia (gum) trees. The rest of the unbuilt areas are either farm areas or veld.

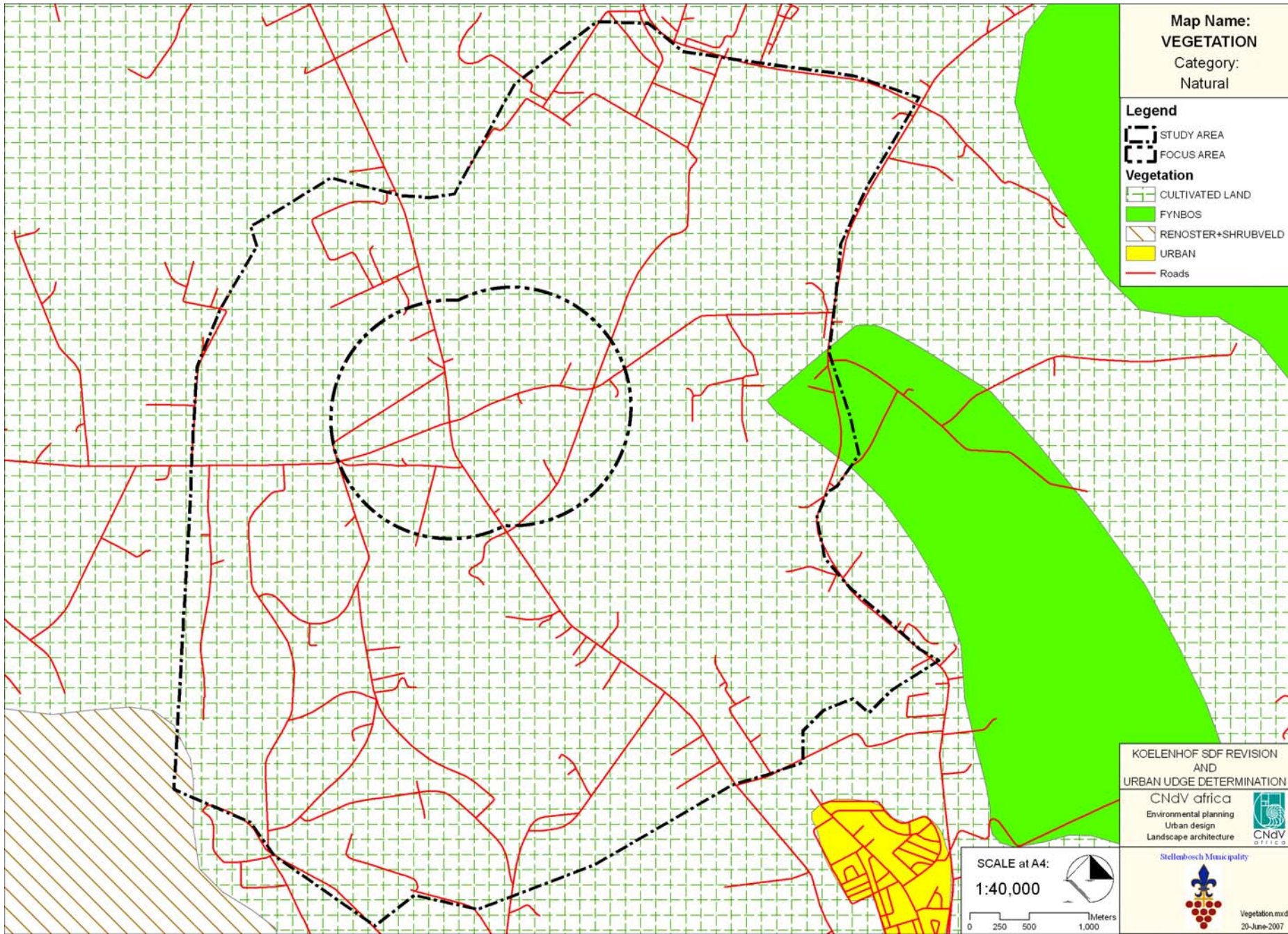


Figure 5.7 Biodiversity and Vegetation

5.2.7 Mining and Building Materials

The current clay mining operations in the study area, as shown in Figure 5.8, are generally the erven in the north western corner of the R304 and the M23 intersection. These erven generally cover:

- Farms 65, portions 9, 20, 43, and 50
- Farm 1357 and
- Farm 1330

The total area covered by the current mining operations isha.

The portions immediately abutting the M23, Farm 1357 and Portion 43 of Farm 65 which contains the mining operations buildings also contain what appears to be a closed/finished mine.

It is recommended that these erven as well as other erven, as soon as they have ceased mining, be closed, rehabilitated and made available for future urban development.

Other mines discussed under Section 5.2.1, one which appears to be on the eastern side of the R304, is no longer operational.

The other two mines discussed under Section 5.2.1 west of the M23 and R304 intersection on the M23 towards Kraaifontein are outside the study area.

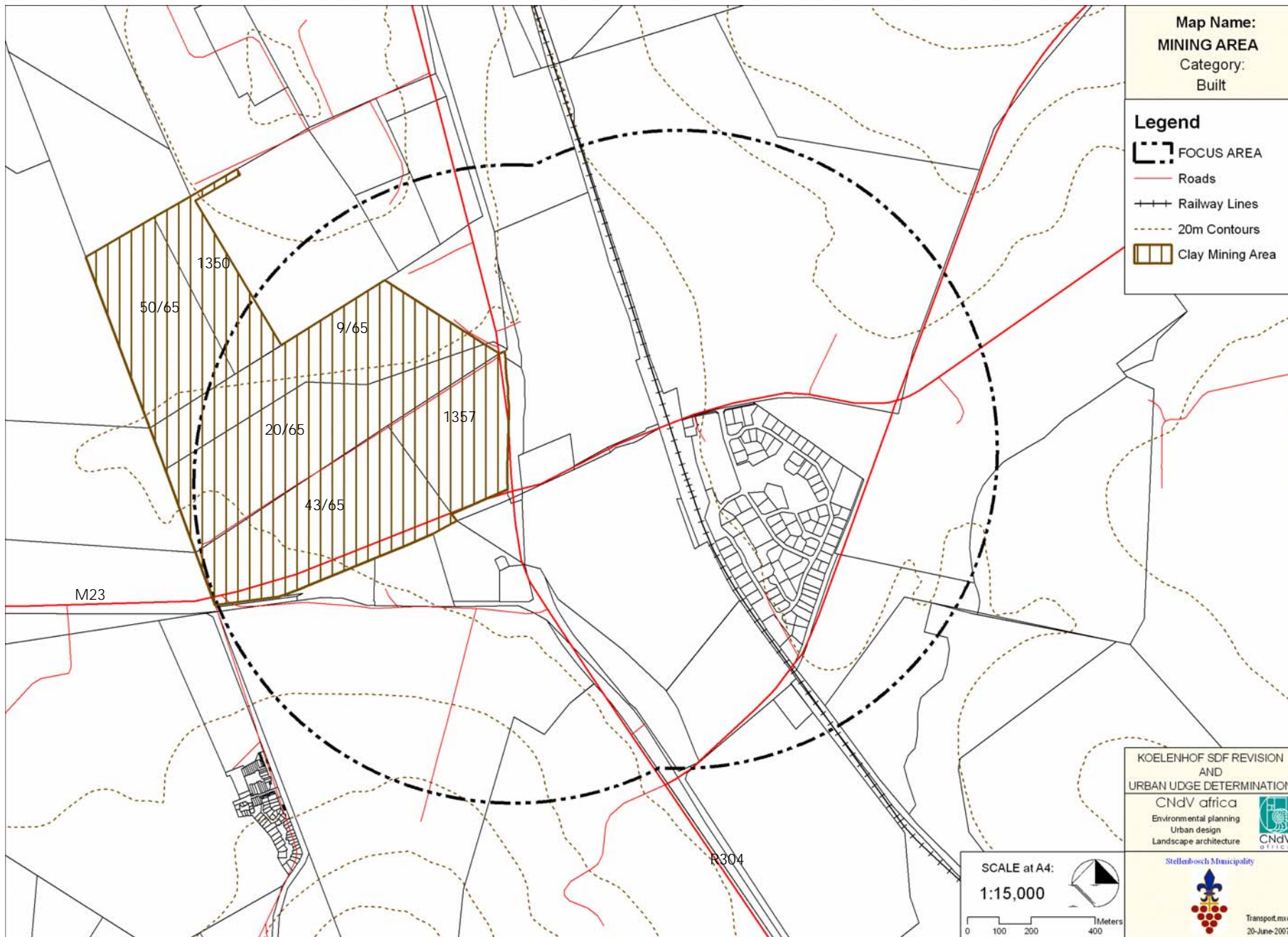


Figure 5.8 Mining and Building Materials

5.2.8 Land Capability for Agriculture

Figure 5.9 shows the land capability to support rain fed agriculture.

As shown in Figure 5.9, five land capability classifications, in terms of the Botanical Society of South Africa for the entire RSA, are applicable for the study area, namely:

- Arable classes I, II, IV, non arable V and VI

Land Capability Class	Land Use Options	Land Capability Groups
I	W F LG MG IG LC MC IC VIC	Arable land
II	W F LG MG IG LC MC IC	
III	W F LG MG IG LC MC	
IV	W F LG MG IG LC	
V	W F LG MG	Grazing
VI	W F LG MG	
VII	W F LG	
VIII	W	Wildlife

W - Wildlife

F - Forestry

LG - Light grazing

MG - Moderate grazing

IG - Intensive grazing

LC - Poorly adapted cultivation

MC - Moderately well adapted cultivation

IC - Intensive, well adapted cultivation

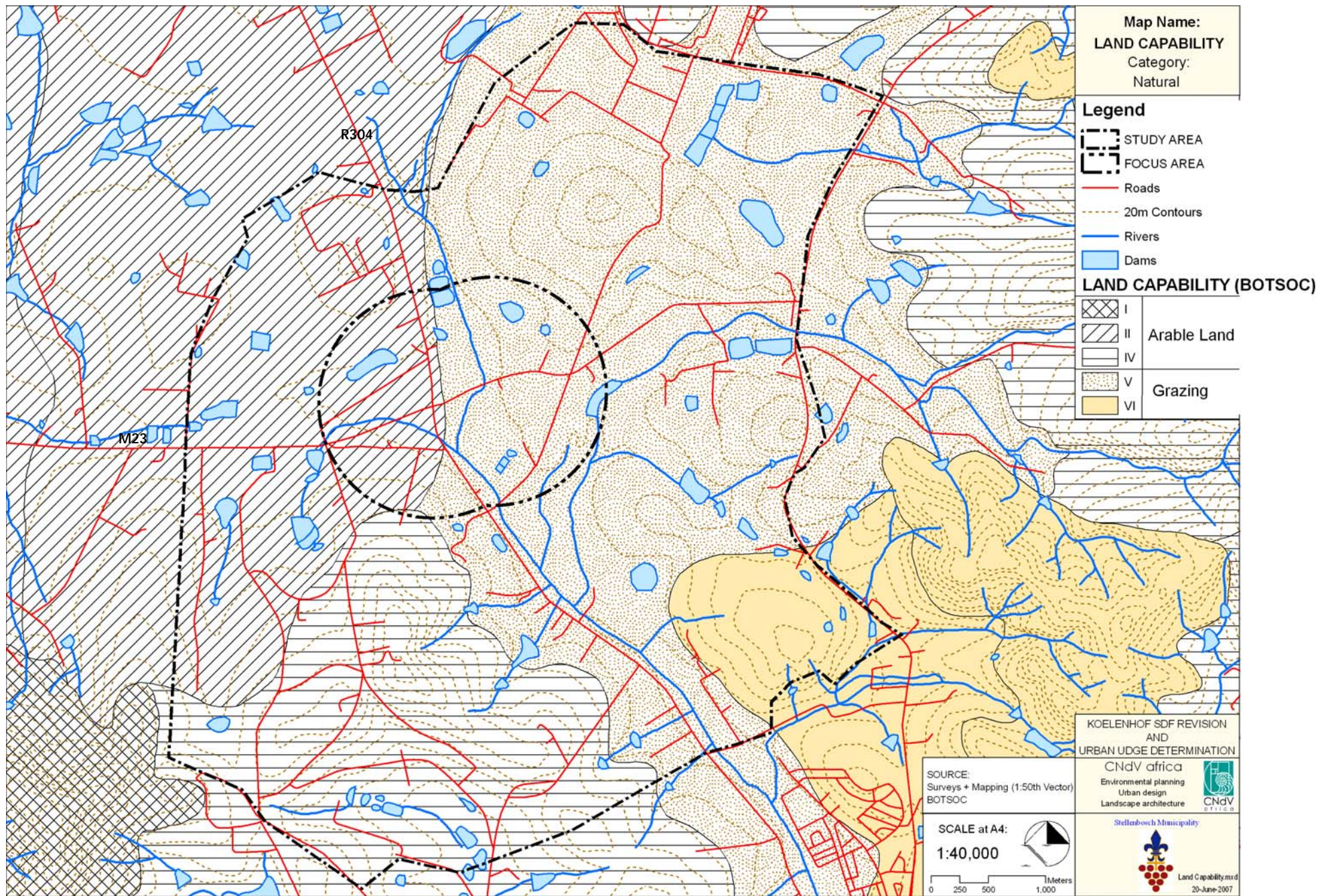
VIC - Very intensive, well adapted cultivation

These land capability areas correspond generally with the geology of the area as shown in Figure 5.2. These classifications indicate that categories I, II and IV are ideally suited for arable land, i.e. crop farming. These classes cover the following areas:

- the Bottleray Mountain areas, which is just outside of the study area
- the south western corner
- the north western corner

The geological maps indicate these areas as generally the sandy and granite soils.

The eastern part of the study area is generally Classes V and VI. These areas have moderate to severe limitation (that restricts the choice of plants and require careful management) and are more suited for grazing and forestry land. These include the greywacke and alluvial soils as shown on Figure 5.2 above.



5.3 BUILT ENVIRONMENT CHARACTERISTICS

- 5.3.1 Transport
- 5.3.2 Infrastructure Provision
- 5.3.3 Existing Developments and Land Use (Focus Area)
- 5.3.4 Ownership
- 5.3.5 Existing Zoning
- 5.3.6 Recent Approvals
- 5.3.7 Land Availability
- 5.3.8 Summary of Focus Area Activities
- 5.3.9 Summary of Key Issues

5.3.1 Transport Networks

Figure 5.10 shows the transport networks in the study area.

Roads

Koelenhof is located at the intersection of the more dominant R304 that connects the settlement with the N1 in a northerly direction and with Stellenbosch about 4km south of the study area. The east-western secondary route, namely the M23, connects the settlement to the R44 in the east and the Kraaifontein / Cape Town area in the west. The R44 is another major connecting route between the N1 at Klapmuts and Stellenbosch (Strand).

Two main access roads to the focus area are provided off the R304. The first and more prominent is the M23 at a signalized intersection at the R304. The second and less prominent is approximately 1km south of the M23.

Most of the road routes in the study area are gravel routes excepting the above major and secondary routes.

Railway Line

Parallel to the R304, along the length of the entire study area is the railway line that connects to Stellenbosch and Muldersvlei station, south and north of the study area respectively. The Muldersvlei station in turn connects the study area to the major railway line between Cape Town and Gauteng.

Level Crossings

Figure 5.10 also shows that there are two occasions where the road crosses the railway line in the form of level crossings. These are potentially conflict areas between the road and rail transport and danger areas that need to be further investigated for potential upgrading, especially if the area is envisaged to be expanded, catering for more people and increased movement.

Public transport

The only public transport in the study area is by train.

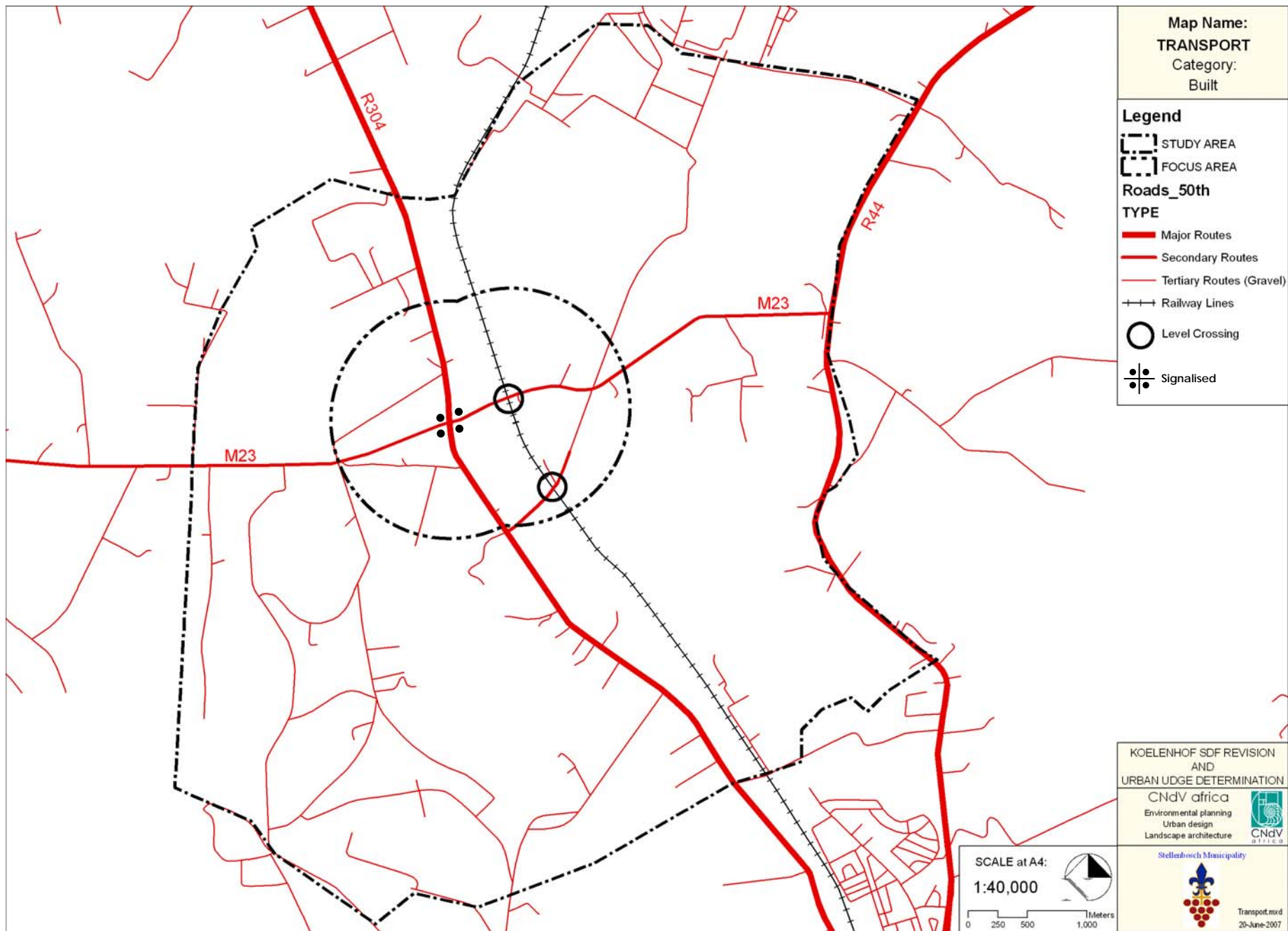


Figure 5.10 Transport Networks

5.3.2 Infrastructure Provision

Sewer

Figure 5.11 illustrates the services and registered servitudes for the study area.

It shows that the sewer services in the study area, is to mainly serve the Koelpark industrial area, and are connected to Stellenbosch. The remainder of the study area is served with a conservancy tank operation by the municipality.

A second sewer main connects from the Vlottenburg area towards the smallholdings area in the south western portion of the site.

Electricity

A major electrical power line cuts through a western portion of the study area generally along the Devon Valley Golf Course Estate boundary across the M23 and goes further north beyond the study area boundary.

Electricity in the study area is supplied by the Eskom electrical reticulation.

Solid waste removal

Solid waste management in the area is done by the Stellenbosch Municipality.

Potable water

The water services for the study area generally runs along the R304 from the north down towards Koelenhof. A second route is in an east west direction along the M23.

Servitudes

A number of registered servitudes taken from the Surveyor General base information are also shown on the services diagram. Some of these servitudes are aligned with the services, e.g. some water and sewer lines, and others not. It is not clear, at this stage, the differentiation between services or other kinds of servitudes.

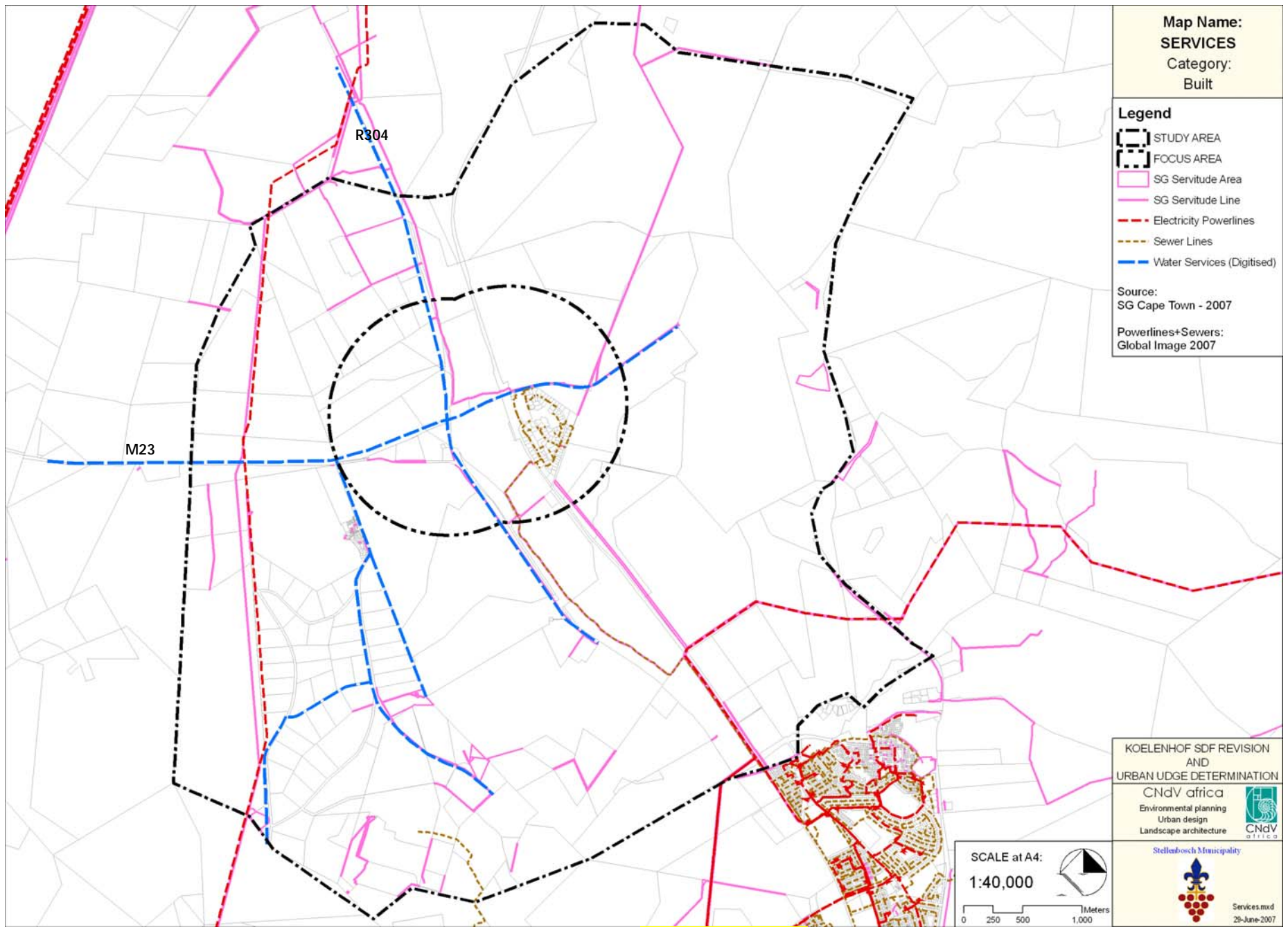


Figure 5.11 Infrastructure Services and Servitudes (source: www.stellenbosch.org and (RE complete))

5.3.3 Existing Developments and Land Use (Focus Area)

Figure 5.12, aerial photograph, shows the existing developments within the focus area of Koelenhof. Located around the intersection of the M23 and the R304 is the Roman Catholic Church, school and convent; the Killarney Brickfields mining operation, the garage and shop that has recently been upgraded, the Basil Williams site and offices.

The other activities in the area includes Koelpark; the Lindelani Place of Safety south thereof; and Simonsig Wine Estate north of Koelpark as well as the Devon Valley Golf Course and Resort, west of the focus area.

The remainder of the study area is generally under agricultural and smallholding use.

Erven 1357 and Farm 65 Portion 43 are not currently mined. The mining activities of the Killarney brickfields are currently active on Portions 9, 20 and 50 of Farm 65 and Erf 1330.

It is clear that the areas no longer being mined should be subjected to the appropriate rehabilitation measures that should have been spelt out in the environmental management plan of the mines. If such measures are not included in those EMPs it is recommended the municipality discuss the rehabilitation options with the mine operator before the closure and handover of the mines under discussion.

Limited housing is found around the station, on Rem Erf 1 and on the eastern edge of Koelpark.

What is also clear in the Koelpark area is a number of residential units providing for low income housing purposes.

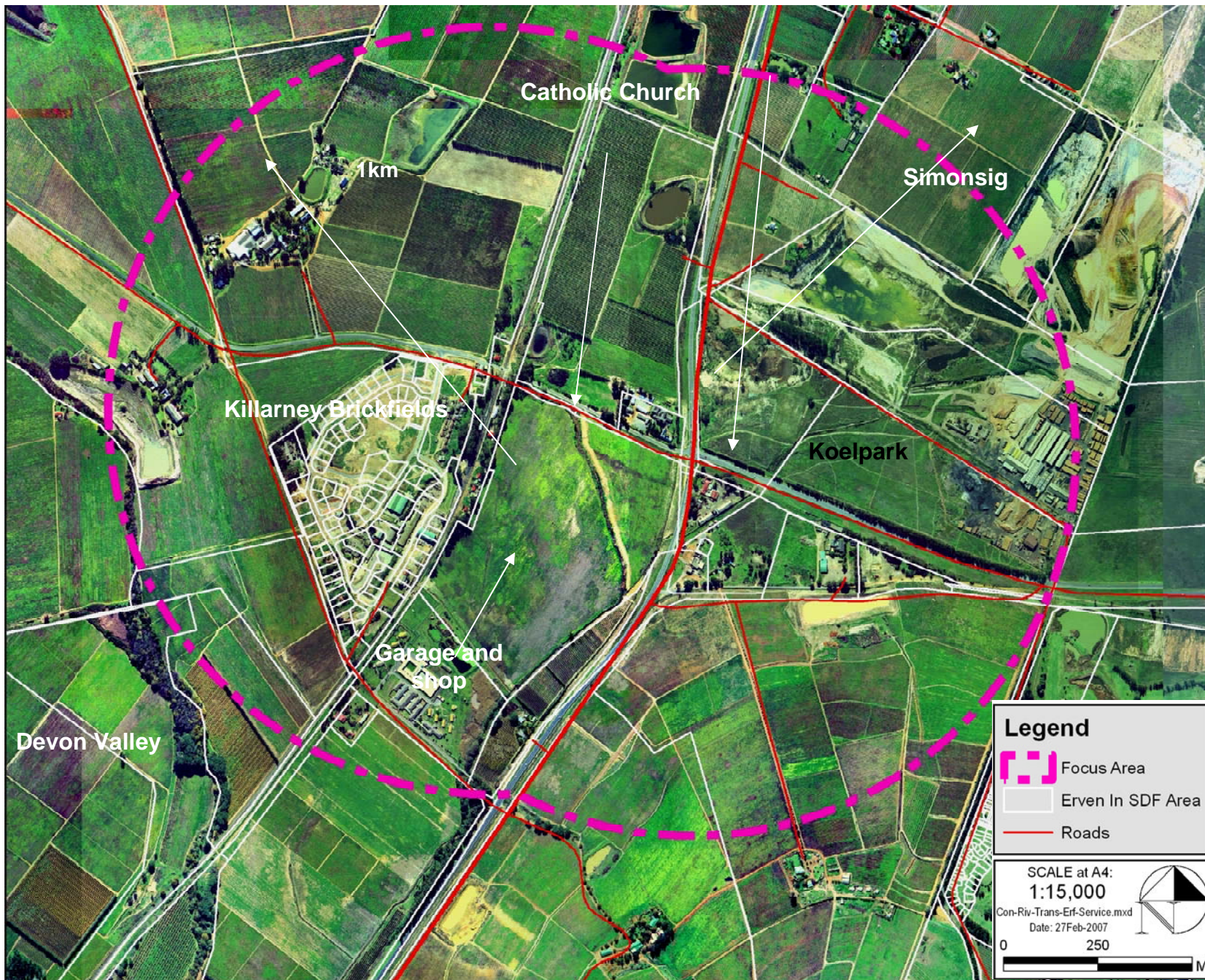


Figure 5.12 Existing Developments and Land Use (Focus Area)

5.3.4 Ownership

Figure 5.13 shows the ownership of the properties in the study area.

The ownership map reveals that the majority, almost all, of the erven in the study area are under private ownership.

The ownership is as follows:

- the Provincial Government of the Western Cape owns the remainder of Farm 62;
- the state owns remainder Farm 34, Portions 35 and 5 of Farm 74 and Portion 1 of Farm 80, remainder Farm 30, Portion 37 of Farm 2 north, Portion 29 of Farm 74, the abutting roads and Farm 1018; and,
- the rest of the erven are privately owned.

A few erven in the study area are currently not registered. These are indicated as Portion 6 of Farm 1277, Portion 5 of Farm 1277 and Portion 15 of Farm 104.

The Municipality does not own any land in the study area. This provides a challenge for government driven projects such as community facilities and subsidy housing. The only state owned land in the focus area (Ptn 29 of Farm 74) is currently developed as the Lindelani Place of Safety.

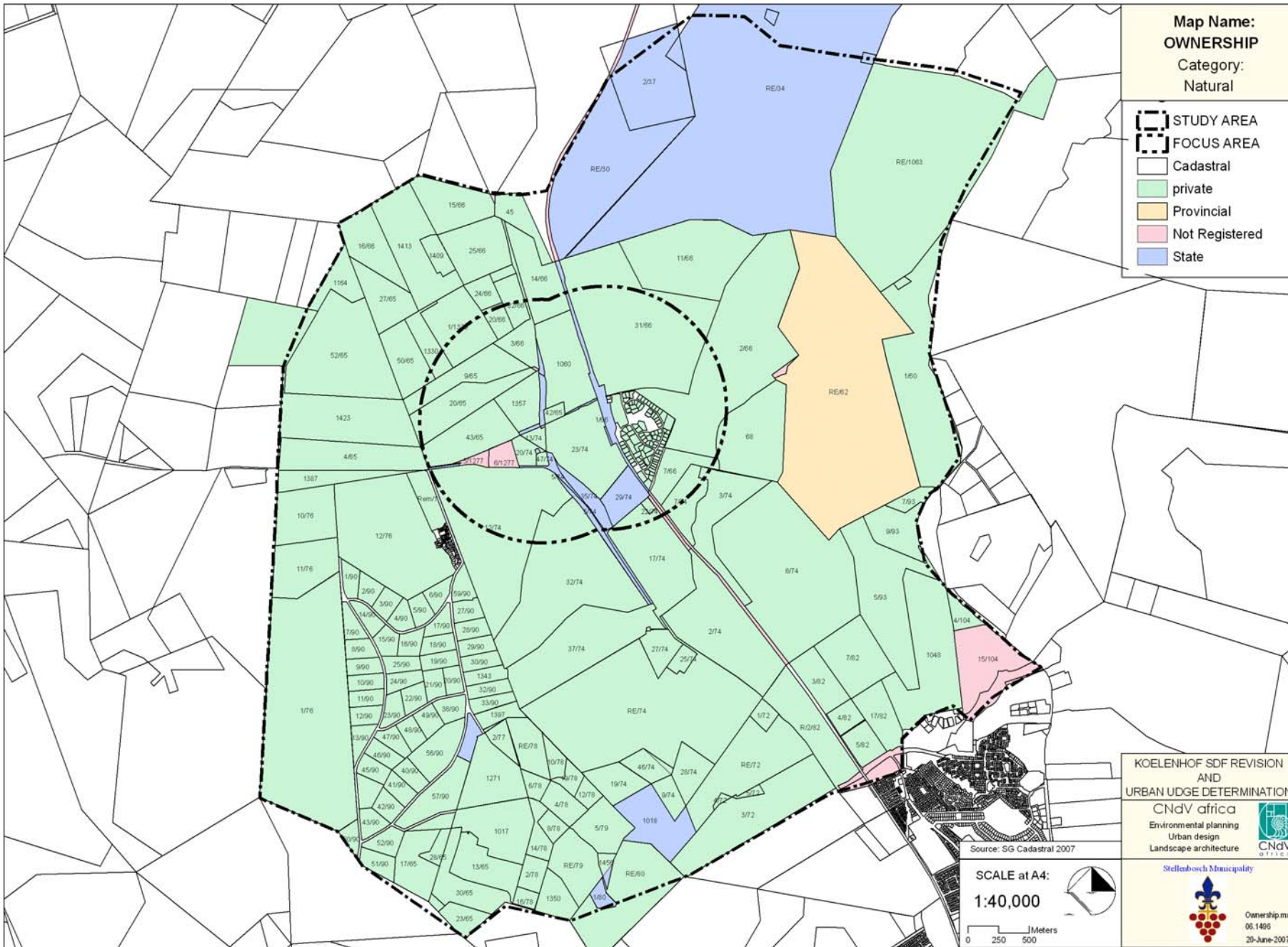


Figure 5.13 Ownership

5.3.5 Existing Zoning

The Stellenbosch Municipality is in the process of formulating an integrated zoning scheme for all the towns within the Municipality. The appointed consultants are currently in the process of compiling an up-to-date zoning map for the Municipality using the existing zoning and updating the zoning for properties that have been rezoned over the years.

Figure 5.14 illustrates the draft zoning map for Koelenhof.

The draft zoning map shows that the predominant zoning in the study area is Agriculture. The Devon Valley Golf Course is zoned Open Space and the residential estate associated with the golf course is zoned Resort zone.

The areas currently being mined are zoned Industrial. However, Farm 65, Portion 9 and Erf 1330 are also zoned Agriculture which is a discrepancy between the current mining operation on it and its zoning.

The Lindelani Place of Safety is zoned Authority and the Catholic school and convent is zoned Institutional zone.

The transport zone is allocated to the railway line.

The garage and abutting erven is zoned for business purposes.

The zoning map indicates an Industrial zone for the Koelpark Subdivision that there are limited residential site on Koelpark, namely Remainder Erf 1, Erven 261 – 272 and Erf 195.

It appears, studying the zoning map, that there are very limited to no land immediately ready, in terms of its current zoning, for other needs of the community, e.g. community facilities, housing, etc.

Transforming the zone of land from agriculture to any other use would necessitate at least an

Environmental Impact Assessment (EIA) under the National Environmental Management Act (NEMA) and a rezoning in terms of the Land Use Planning Ordinance.

Koelpark Residential Estate
Stellenbosch

Hatch	Erf No	Zoning
	180, 247 road	Transport Zone I - road widening
	181	Business Zone II
	182	Institutional Zone II
	183-184 185-194 196-211 213-224 226-228 240-243 246-249 273-274 276-282	Industrial Zone I
	261-272	Residential Zone I
	Ram of 1	Residential Zone III
	195	Residential Zone V
	183, 212 223, 219 244, 275 283	Open Space Zone I



Figure 5.14b Koelpark Residential Estate Existing Approved Zoning

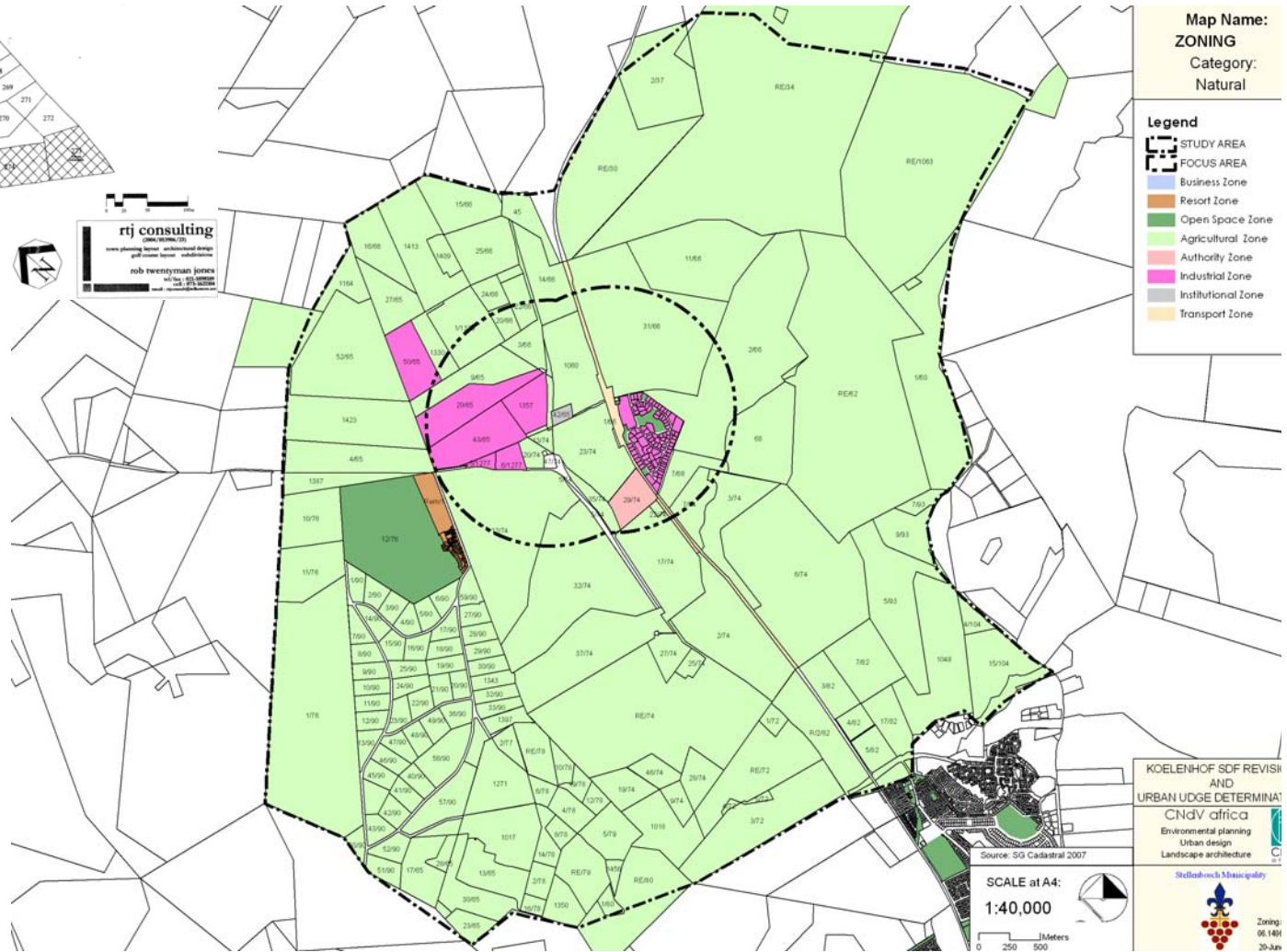


Figure 5.14a Existing Zoning

5.3.6 Recent Approvals

Figure 5.15 indicates the recent approvals in the study area.

The Devon Valley Golf Course and Resort which is located on Farm 76 Portion 12 was approved as a rezoning out of Agriculture.

The second approval indicated on the map that was granted was for the garage, service station and the shop on Portion 47 of Farm 74.

The third approval indicated on the map relates to the Koelpark Industrial Park.

The Koelpark Industrial Park that was approved on Portion 9 of Farm 66 was approved by the Boland District Municipality on 19 March 2001.

Two other applications are pending, i.e. for Erf 1 in Koelpark and for Portion 20 of Farm 74, the latter being immediately west of Portion 47 of Farm 74.

In terms of the approval for Koelpark, Portion 185, the north eastern most portion on that development is zoned for residential. Erf 273 which is the southern most portion is zoned for the Eskom sub-station. Remainder Erf 1 is also zoned for residential purposes. The rezoning of the Koelpark development also allows for an institutional site and for some road widening along the M23 or the Kromme Rhee Road.

Devon Valley Golf Course on Portion 12 Farm 76 was approved by the Stellenbosch municipality on 19 March 2001.

Erf 1 Koelpark application for rezoning and subdivision for residential development was submitted on 6 March 2006.

An application or a rezoning residential development on Portion 20 Farm 74 was submitted on 17 October 2005. An application for the rezoning of Koelpark, generally from Industrial to Residential, was also submitted in 2005.

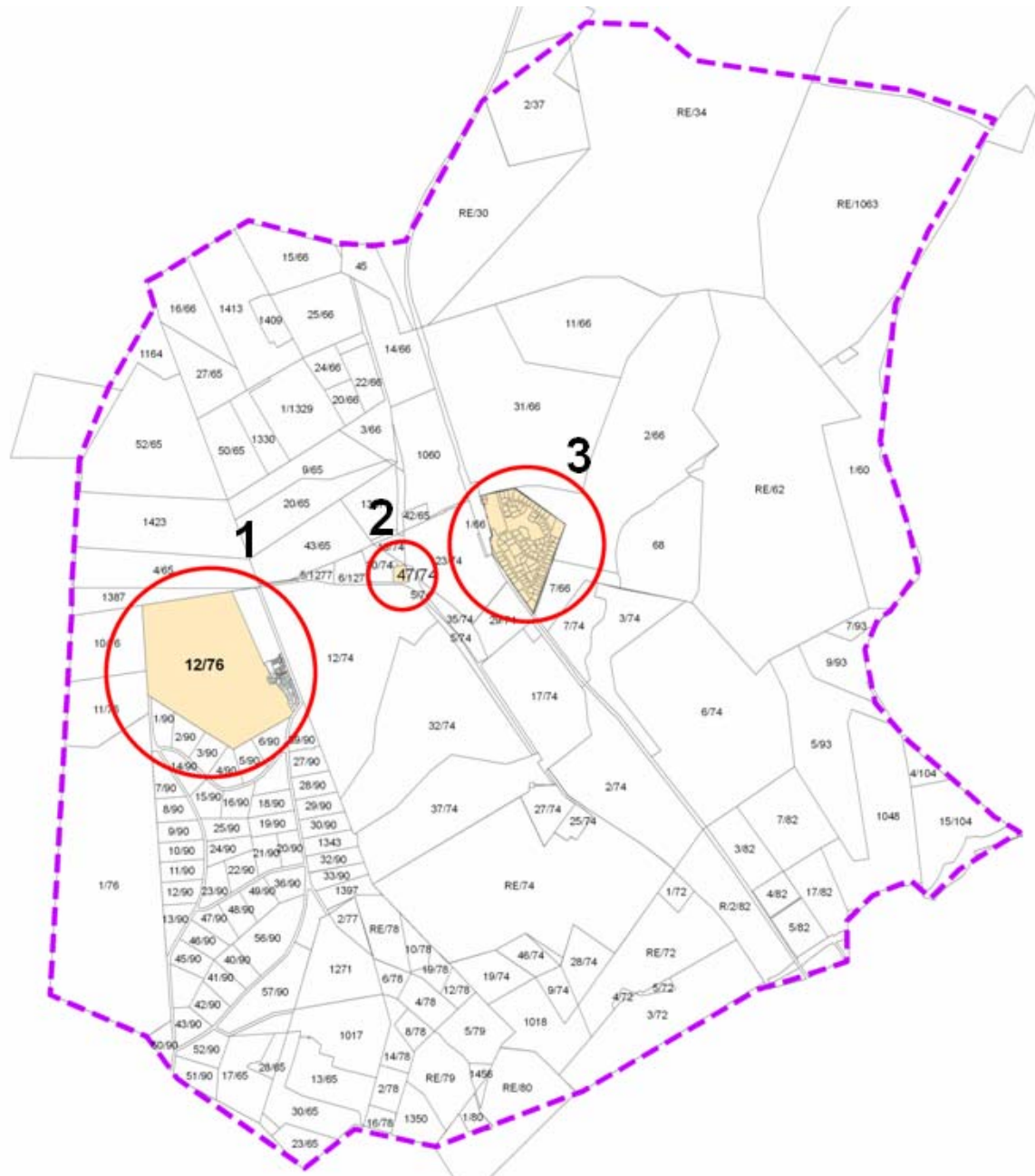


Figure 5.15 Recent Approvals

Figure 5.16a-f shows a collage of photos of the study area.



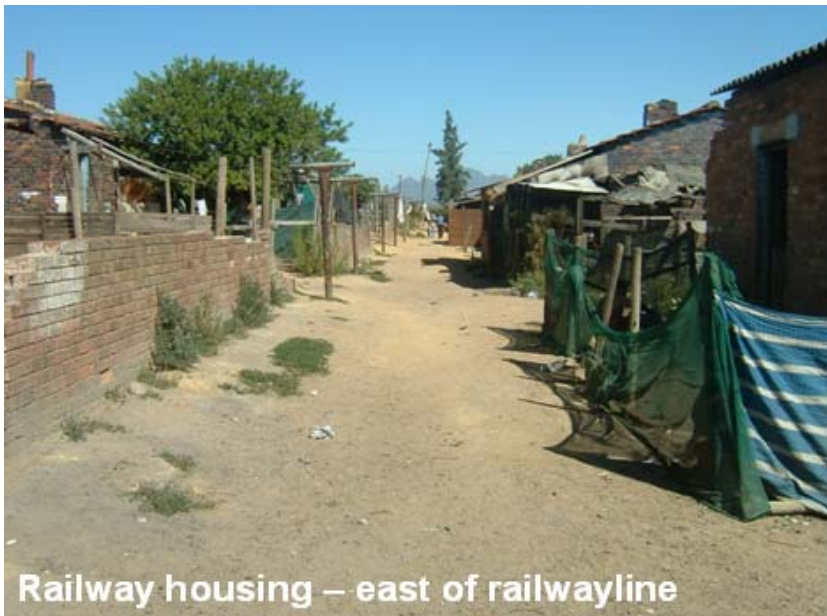
Figure 5.16a Site Photos



Compound along gravel road



Residential units along gravel road



Railway housing – east of railwayline



Koelenhof railway station and cafe

Figure 5.16b Site Photos



Agriculture



Residential units along gravel road



Lindelani Place of Safety



Second access to Koelenhof East

Figure 5.16c Site Photos



Level crossing M23 and Railway line



Railway line



Koelpark -manufacturing



View towards Devonvale Golf Estate

Figure 5.16d Site Photos



Undeveloped land east of railwayline



Industrial activity along R304 (Killarney Brickfields)



Railway housing – east of railwayline



Undeveloped Koelpark

Figure 5.16e Site Photos



Detention pond east of railwayline



Catholic church complex



Upgrading of garage and shop



Origin industrial development

Figure 5.16f Site Photos

5.3.7 Land Availability

Figure 5.17 shows the land availability in focus study area.

The land in the study area can be classified as either vacant which could be utilised immediately or under-utilised, i.e. currently not utilised to its full capacity.

Given the two classifications, approx 41,5ha of land falls under the vacant category and approx 48,5ha of land falls under the under-utilised land category. This amounts to a total of 90ha of land that could possibly be available for development.

At an average 25du/ha this would allow for an increase of 2250 units of 9000 more people given an estimated 4 persons per household.

The areas north of the M23 and the R304 that is currently being mined or on which mining activities have ceased should be rehabilitated to acceptable levels and conditions prior to considering it for development.

It should be noted that most of these areas, namely the area to be rehabilitated, the area immediately south of it, across the M23 and the areas in the Koelpark areas are zoned for Industrial purposes. The areas between the railway line and the R304 are currently zoned Agricultural and the area around the station are zoned for Transport Use and Residential / Industrial.

When considering the development of the above areas, necessary land use, environmental heritage applications would have to be submitted.

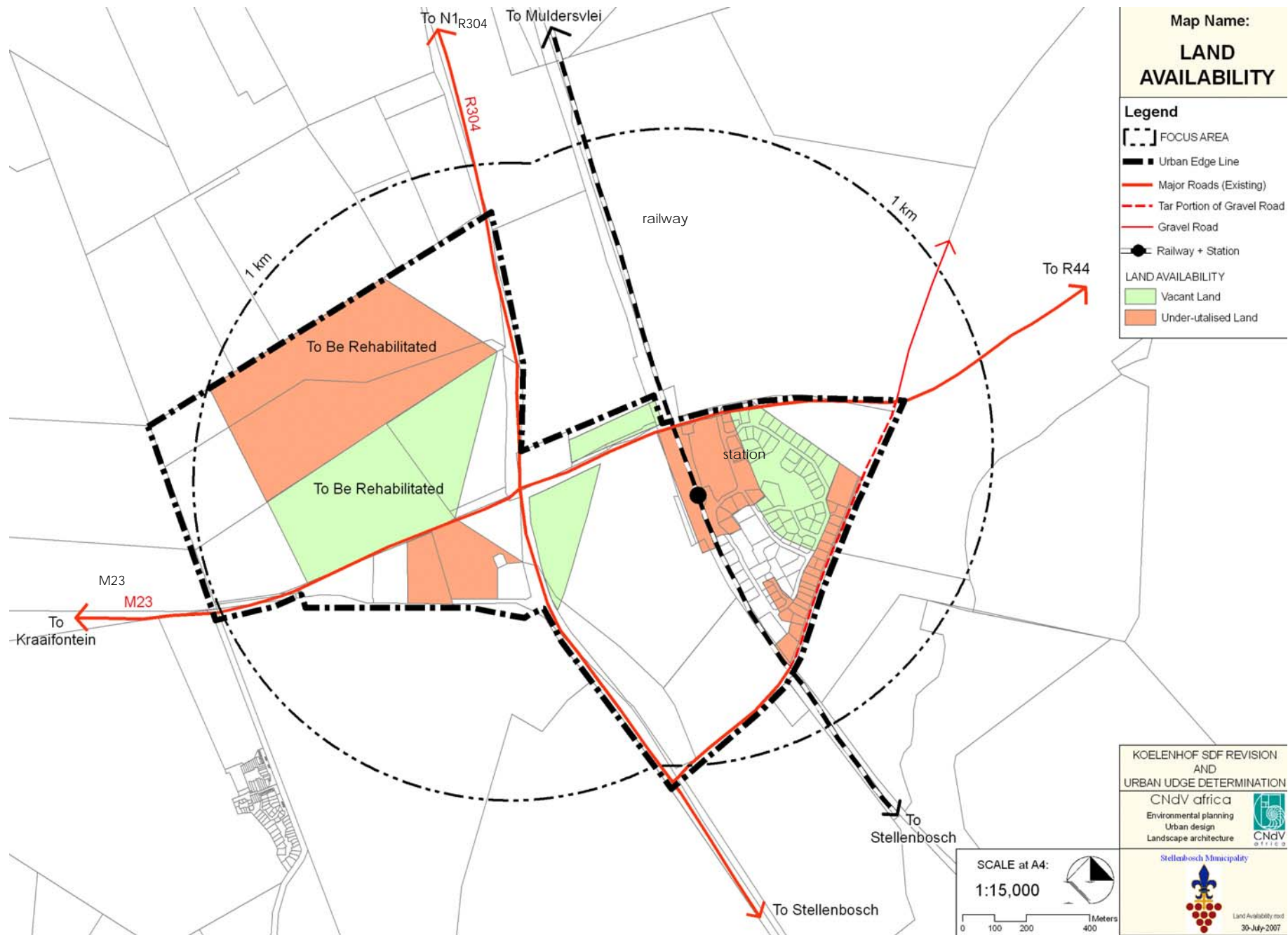


Figure 5.17 Land Availability

5.3.8 Summary of Focus Area Activities

Figure 5.18 gives a snapshot of the focus area illustrating the built and natural forms. This diagram shows:

- a number of buildings are scattered in an incoherent manner in the study area
- the mining area that is currently disturbed that could ideally be rehabilitated
- the major pockets of agricultural land surrounding the intersection areas of the R304 and the M23
- the wetland river system and flood wetlands through the central part of the area between the railway line and the R304
- possible opportunities for urban development along these wetlands subject to the position of the floodlines
- the relatively under-utilised Koelpark industrial area
- the intersections where the railway lines and the existing river crosses that needs to be sensitively addressed
- the two main intersections points along the R304 and the portion of the gravel road as an extension of the southern access to Koelpark that should ideally be retained.



Figure 5.18 Summary : Focus Area Activities

5.3.9 Summary of Key Issues

The following summarises the key issues for the study area:

- Need for Housing (top priority in ward and municipality).
- No land in municipal ownership.
- High levels of unemployment – need for job creation.
- Lack of community facilities.
- No land readily available for community facilities or housing.
- Pressure for urban development in the area. (not necessarily all driven by the need of the area).
- Underdevelopment of the Koelpark Industrial area.
- Rail and Road Crossings : dangerous due to heavy vehicular traffic.
- Good Access to transport : road and rail (public transport is via rail only).
- Mined areas to be rehabilitated- possibly suitable for urban development.
- Agricultural lands to be protected.
- Scenic Route to be protected (R304, M23 and R44).
- Development Along R304: areas to be protected/ landscaped for scenic beauty.
- Scattered pockets of urban development to be integrated into a holistic integrated and sustainable human settlement.
- Number of river systems- to be protected.
- The tributary of the Plankenbrug River and associated potential flood prone area – to be conserved.
- Need to form development on nodal areas: road intersection and station precinct.
- Identified areas to be investigated to determine suitability for urban development.

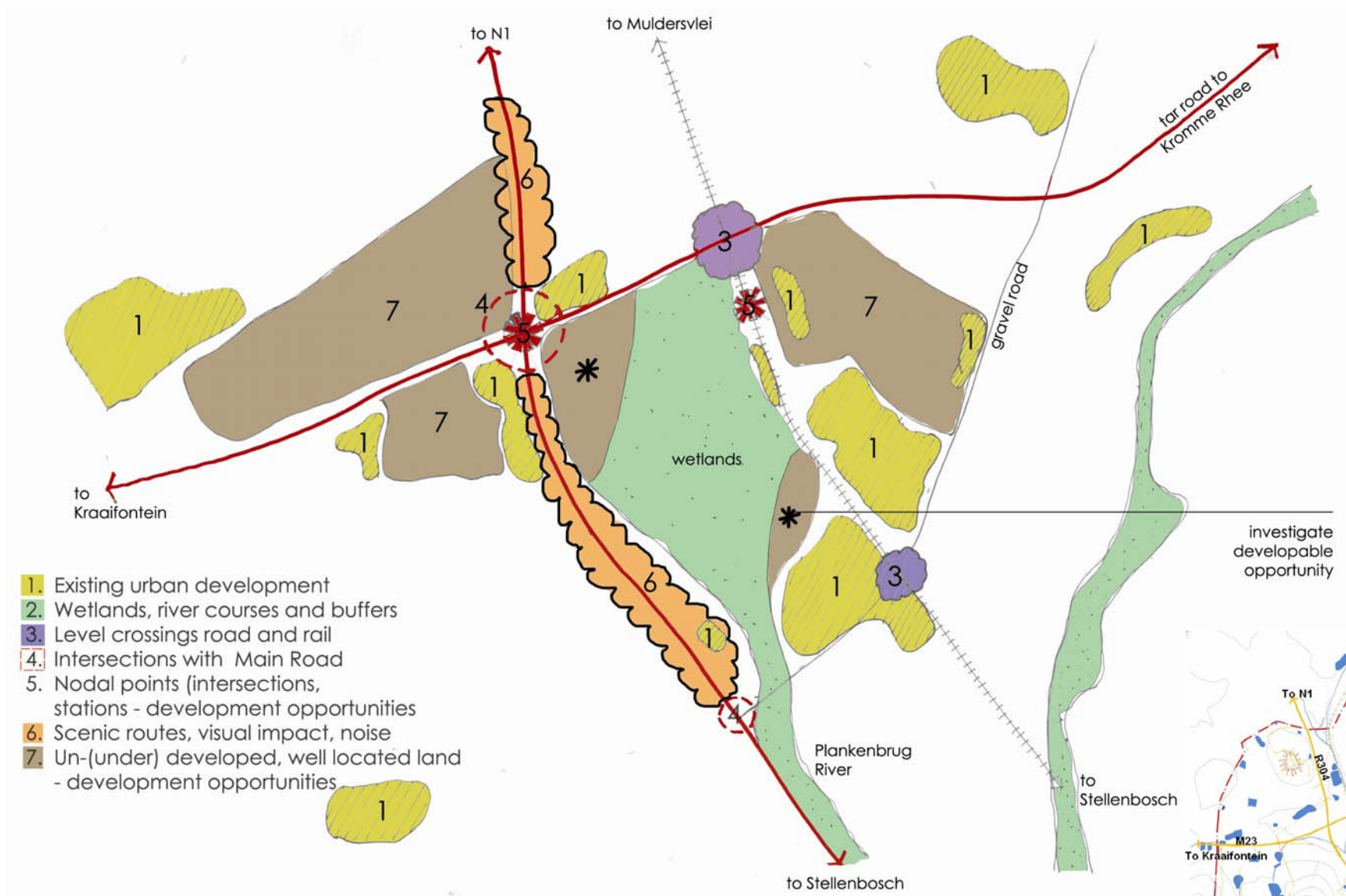


Figure 5.19 Summary : Key Issues

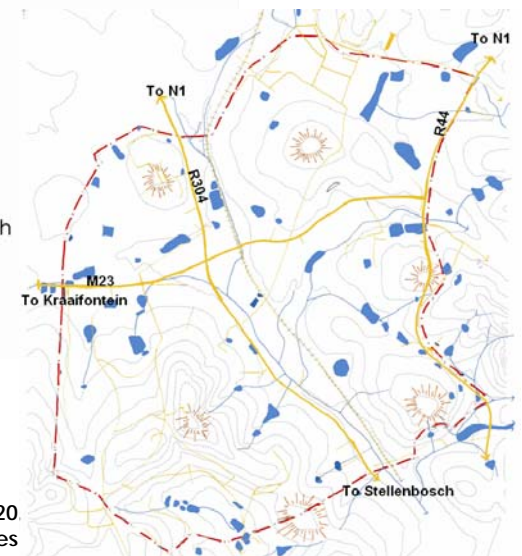


Figure 5.20 Summary Activities

6. THE ROLE OF AND VISION FOR KOELENHOF

- 6.1 The Role of Koelenhof
- 6.2 The Vision for Koelenhof

6.1 THE ROLE OF KOELENHOF

Main Role should be that of agricultural production.

The Winelands Integrated Development Framework (WIDF) motivated that the area should remain predominantly agricultural use and industry and could accommodate some resorts and a rural settlement around the intersection.

Due to the size of available (developable) land, development pressures in and around Koelenhof, including Stellenbosch, it is proposed that the role of Koelenhof be that of a mainly agricultural hamlet with limited residential and limited industrial (to help its residents and some from Stellenbosch). In this regard, depending on land availability within the proposed urban edge and the proximity to Stellenbosch, Koelenhof can provide some relief for the pressure for housing, currently experienced in Stellenbosch.

6.2 THE VISION FOR KOELENHOF

Conservation of natural areas is important – Fynbos and renosterveld

Water courses: Plankenbrug river system important for ecological, recreational and water resource value

Tourism Potential: scenic quality and wine tasting opportunities, farm -life experiences and recreational

Future development within the Koelenhof Area should support and enhance agricultural production and tourism, whilst addressing the socio-economic needs of the resident community. Koelenhof should not be developed into an urban centre severed from the surrounding and underlying rural character, but should retain the rural and agricultural nature and functions.

7. OBJECTIVES, STRATEGIES AND KEY PRINCIPLES

- 7.1 Objectives
- 7.2 Strategies
 - 7.2.1 Strategies for Objective No. 1 : Create an Integrated human Settlement
 - 7.2.2 Strategies for Objective No. 2 : Deliver Human development and basic need programs where required
 - 7.2.3 Strategies for Objective No. 3 : Protect biodiversity, agricultural and heritage resources
- 7.3 Key Spatial Development Principles
 - 7.3.1 Overall Guiding Principles

7.1 OBJECTIVES

It is proposed that the following broad objectives dictate and drive the nature and form of development in the study area:

No 1 Create an integrated human settlement.

This is a national agenda to create liveable and integrated human settlements. This means that the settlement ought to work in the favour of all concerned, especially the poor, that the location of services and facilities and the structure of the town need to consciously promote this agenda.

No 2 Deliver human development and basic need programs where required.

This program, based on the National Spatial Development Perspective (NSDP), encourages the spending of resources on people, i.e. promoting the Batho Pele principle. In this regard the SDF will make proposals dealing with the human development and human needs programs.

No 3 Protect biodiversity, agricultural and heritage resources.

In the promotion of sustainable development, the biodiversity and agricultural resources are fundamental to the protection of the ecological integrity of a place. Therefore, the objective is to protect, as far as possible, these areas from degradation. The heritage resources particularly, in the form of buildings which along with the agricultural character of the environments are synonymous to Stellenbosch. Therefore, it is important to protect these elements against insensitive urban developments, especially to maximise on the possible tourism spin-offs.

7.2 STRATEGIES

The following strategies are proposed to attain the above mentioned objectives:

7.2.1 Strategies for Objective No. 1 : Create an Integrated human Settlement

- *Number 1 Establish an urban edge*
The purpose of the urban edge would be to (i) help restructure the urban areas to achieve high levels of efficiency; (ii) to achieve and

average density of 25-40du/ha; and (iii) prevent the lateral growth of the urban areas into the natural, sensitive and agricultural areas. This urban edge is to be reviewed either every 5 years with the revision of the SDF or when the current urban area has reached the aimed densities, depending on which of the two is achieved first.

- *Number 2 Conveniently locate urban activities and promote public and non-motorised transport*
Urban activities are to be located on the most accessible positions. These activities not only include community facilities but also transport activities and uses such as shops, housing, employment, etc. By locating these on the most accessible positions it reduces the need for transport and makes non-motorised forms of transport, e.g. walking and cycling more viable. By promoting public transport and locating the activities close to public transport interchanges, the need for private motor vehicle use and its associated impact on the natural environment are reduced.
- *Number 3 Provide for and promote a mix of uses in developments*
Providing for a mix of uses opposed to mono-uses in developments promotes the principle of integrated human settlements. In this regard, developments with single uses are to be discouraged and developments promoting mixed uses to achieve integrated settlements should be encouraged.
- *Number 4 Promote socio-economic integration*
It is vital that income integration takes place to restructure the old apartheid town structures and to promote integrated human settlements. Therefore, for instance, any new residential development especially GAP or Market Related housing should accommodate all three income categories: Subsidy, GAP and Market related housing to facilitate this integration. This should happen in a sensitive manner.
- *Number 5 Promote residential development of an average density between 25 and 40 du/ha in urban areas*
This should be done to achieve a more efficient urban environment and more integrated settlements. It is found that most urban services work optimally when these minimum densities are achieved. This mean that an average density of between 25 and 40du/ha is achieved for the town as a whole, which implies that some areas may have higher densities and some lower densities, depending on its

location. With the help of an urban edge and the densification of appropriate areas, e.g. along main transport routes, e.g. R304 and M23, it could be possible, through a range of densities, to help achieve this national and international target for creating efficient settlements.

7.2.2 Strategies for Objective No. 2 : Deliver Human development and basic need programs where required

- *Number 1 Promote economic empowerment programs and opportunities*
These programs are to improve the economic levels of the residents in the study area. This aspect is a top priority on the Ward's Needs List in the IDP.
- *Number 2 Initiate land reform programs as part of the LED Strategy*
This is to be done to achieve the national land reform target of 30% white owned agricultural land in black ownership by 2014.
- *No 3 Establish a period market along with government services to be developed into a permanent market over time*
This is to help establish the full package of basic services for the local community. Currently there is a need for a community hall, clinic, post office, training centre, etc.

7.2.4 Strategies for Objective No. 3 : Protect biodiversity, agricultural and heritage resources

- *No 1 Prevent the inappropriate conversion of rich rural areas and existing agricultural activities*
The purpose for this strategy is to protect the sensitive environments to help achieve sustainable development.
- *No 2 Protect the ecological corridors*
The purpose for this strategy is to protect the sensitive environments, ecosystems and habitats to help achieve sustainable development.
- *No 3 Create scenic routes as a gateway into Koelenhof*
The purpose of this strategy is to improve the tourism image of Koelenhof and to stimulate economic development in the area.
- *No 4 Promote the historical farmsteads in the area*

The purpose of this strategy is to improve the tourism image of Koelenhof and to stimulate economic development and to protect the historical quality and value of the area.

- *No 4 Discourage urban development outside of urban edges*
The purpose for this strategy is to protect the sensitive environments to achieve sustainable development and to improve the efficiencies of the current and proposed urban areas.
- *Prepare urban design and architectural guidelines to be applicable to all new developments, including commercial and industrial.*
This is to retain the architectural and historical quality that is associated with Stellenbosch and to use this for legacy and tourism purposes.

7.3 KEY SPATIAL DEVELOPMENT PRINCIPLES

The following summarized spatial development principles, drawn from applicable national and provincial legislation, inputs from the environmental, planning and development issues as identified by the municipal officials, are proposed. See Annexure 1 for a set of detailed principles.

7.3.1 Overall Guiding Principles

The following overall guiding principles are proposed:

7.3.1.1 General

- Embrace the principles of sustainable development, as defined by the National Environmental Management Act (NEMA): " the integration of social, economic, and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations."
- Develop mechanisms to ensure the efficient, economic and effective management of resources in an integrated manner.
- Commitment to the goals and targets of Agenda 21.

7.3.1.2 Urban Environment

- Promote Smart Growth in Stellenbosch with a special focus on quality rather than quantity.
- Foster and promote the principles of bio-regional planning.

- Support and promote the principles for land development as stipulated in the Development Facilitation Act No 67 of 1995, Section 3 which promotes, inter alia,:
 - the speedy delivery of land development that provides for security of tenure for the widest possible range of tenure alternatives;
 - that development areas be judged on its own merits
 - that the competent authority, in this case the municipality, co-ordinate the interests of various sectors involved in or affected by land development so as to minimize conflicting demands on scarce resources.
 - On the stimulation of the effective functioning of a land development market based on open competition between suppliers of goods and services.
 - Create sustainable and viable urban settlement (urban villages) by :
 - reinforcing existing urban and industrial nodes and the (transport) links between them, rather than developing new nodes and new links
 - Implement strong urban edges and prohibit urban sprawl through densifying and integrating the urban settlements.
- Existing settlements should, where appropriate densify instead of extending or developing new settlements.

7.3.1.3 *Natural Environment*

- Protect the special natural features by :
 - Avoiding the loss of natural habitat in threatened ecosystems and priority ecological corridors
 - Preventing the loss of high potential agricultural resources and especially from urban development in the form of urban sprawl.
 - Protecting water resources and the functioning of freshwater ecosystems

7.3.1.4 *Socio Economic*

- Show bias in favour of the needs of the urban and rural poor by ensuring that the town is sensitive to the aspects of affordability and accessibility of the poor.
- Deliver public service according to the eight principles of Batho Pele which stress that people be put first.
- Comply with the National Spatial Development Perspective (NSDP) investment guidelines that motivates that:
 - Future settlement and economic development should be channelled into corridors of existing and potential development opportunity and existing nodes that are adjacent to or link the main centres.

8. THE PROPOSED SPATIAL DEVELOPMENT FRAMEWORK

- 8.1 Broad Land Uses
- 8.2 Spatial Planning Categories
- 8.3 Movement Networks
- 8.4 Open Space Network
- 8.5 Urban Edge and Densities
- 8.6 Residential (Housing)
- 8.7 Industrial
- 8.8 Mixed Use Development
- 8.9 Institutional Sites
- 8.10 Human Development
- 8.11 Economic Development and Tourism
- 8.12 Land Reform
- 8.13 Heritage Aspects
- 8.14 Architectural and Landscaping Design

8.1 BROAD LAND USES

The following major/ broad land uses are observable in the study area on Figure 8.1 and it is proposed that these generally be retained.

8.1.1 Agriculture (2577ha)

This is the predominant land use in the study area. As Koelehof is seen as a rural area, agriculture is the main activity. A number of farms are active in the study area and are generally located on moderately to good potential agricultural soils.

8.1.2 Agricultural Smallholdings (532ha)

The south western section of the study area has a number of agricultural smallholdings that accommodate amongst other, a number of wineries. These units have been subdivided from the larger agricultural units and it is proposed to retain these units as agriculture.

8.1.3 Urban development (196ha)

The urban development area be confined to the Koelenhof Focus Area.

8.1.4 Resort Development and Golf Course (71ha)

The Devon Valley Golf Estate and Resort is located in the study area and it is proposed to retain this use. However, it is proposed not to extend this use further into the agricultural or small holding areas but to limit all new urban development to the proposed urban development area, see Section 8.5.

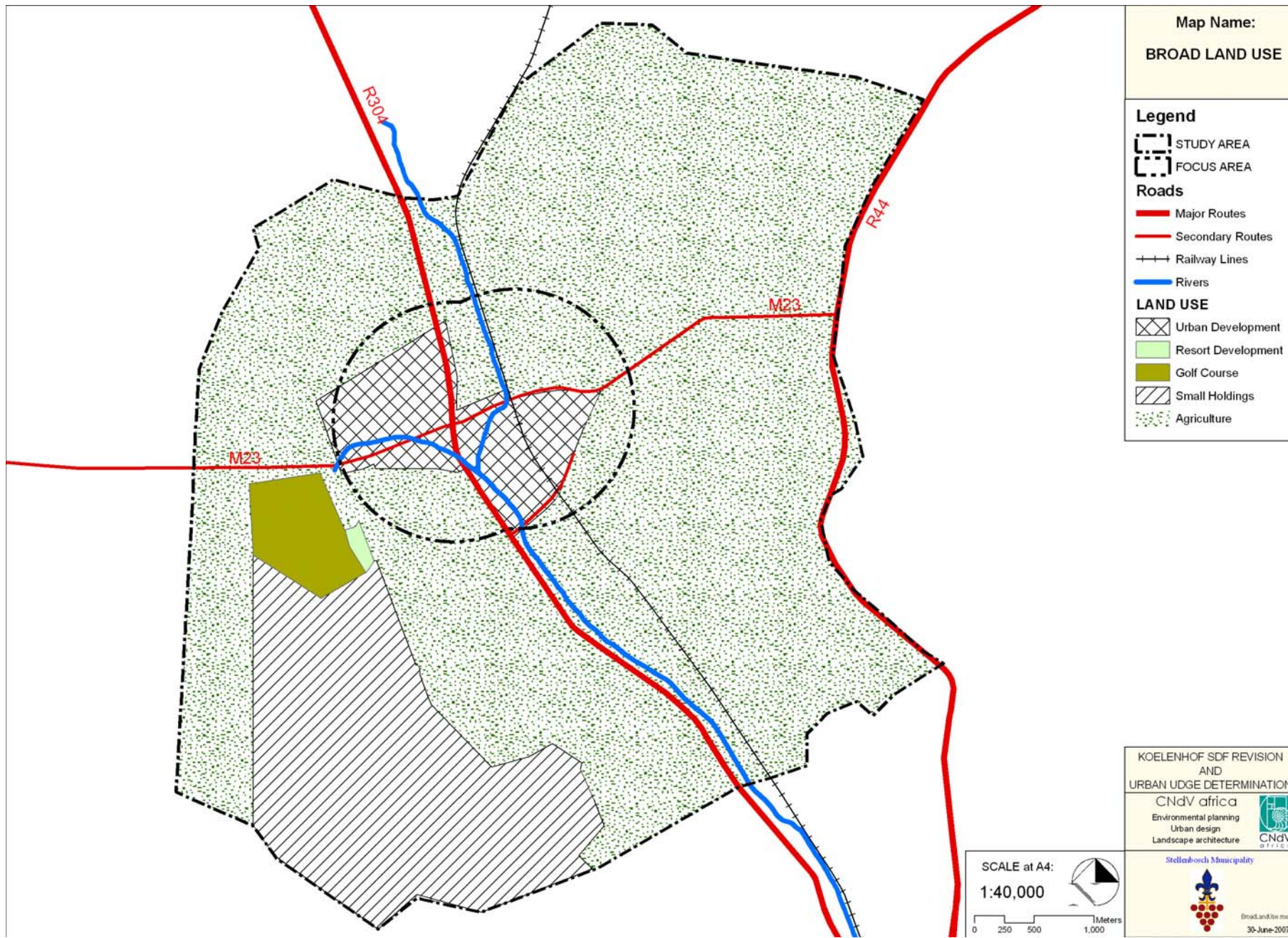


Figure 8.1 Broad Land Uses

8.2 SPATIAL PLANNING CATEGORIES

It is proposed that the following spatial planning categories be confirmed as indicated on Figure 8.2.

8.2.1 Core Areas

Core conservation areas are areas that are either Wilderness or Proclaimed Nature Areas. In these areas only the following uses will be permitted:

- Restrictive public access;
- The area is to remain in its pristine state;
- No urban development
- Passive recreation and environmental education

Two core areas are also shown on Figure 8.2, namely the Renosterveld and Fynbos areas. It is proposed that these areas are deemed core conservation areas and are protected from urban development.

It is proposed that the riverine systems be defined as ecological corridors and that these be protected from urban development. These areas are sensitive for natural ecosystems and imperative habitats for their systems.

The Plankenbrug River, as it passes through the study area, is therefore proposed as buffer area. These river systems should have a buffer zone around it of not less than 30m.

8.2.2 Buffer Areas

Buffer areas include the following areas:

- Public or private conservation
- Rehabilitation
- Extensive agriculture

The following uses are permitted in these areas:

- No agriculture without EIA, except sustainable harvesting of natural resources
- Research, environmental education, eco-tourism (excluding golf courses)
- Conservancies

8.2.3 Agriculture Areas

The following areas are considered transition areas:

- Intensive agriculture;
- Encourage use of existing dwellings

The following uses are permitted in this zone:

- Agricultural buildings

It is proposed that the current agricultural zoned areas including the Devon Valley Golf Course and Resort form part of this category.

8.2.4 Urban Area

These include any urban related areas that form part of the Koelenhof Focus Area around the R304 and M23 intersection within the urban edge, see Section 8.5 below.

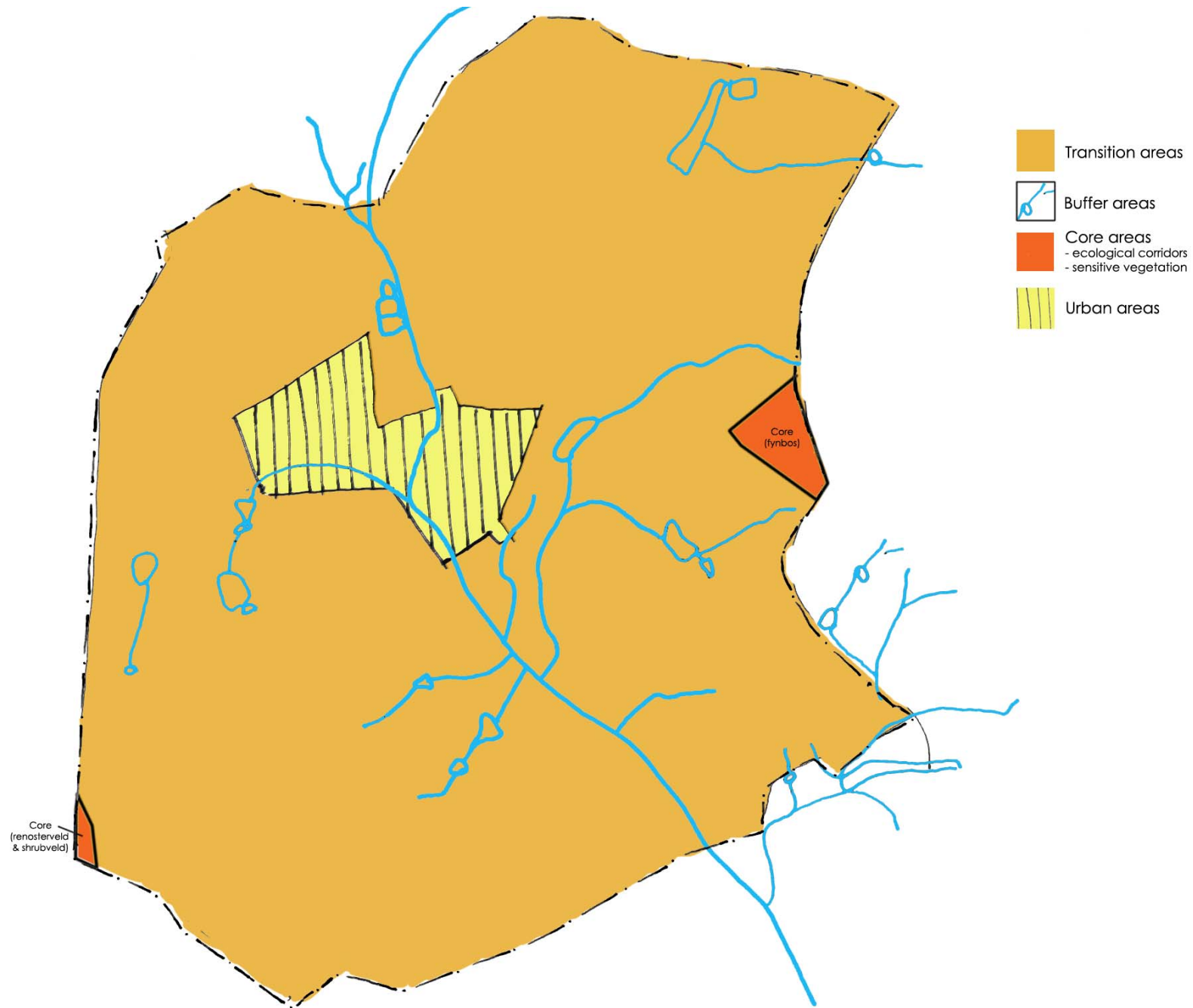


Figure 8.2 Spatial Planning Categories

8.3 MOVEMENT NETWORKS

Figure 8.3 illustrates the main movement network proposals in the study area. These are as follows:

8.3.1 Downgrading of Main Roads through Koelenhof

To facilitate the economic development opportunities in the area, capitalizing on the passing trade, it is proposed to investigate the downgrading of the main roads (R304 and M23) as they pass through the Focus Area. This can be achieved through the redesigning of the cross sections of these road.

The redesigned cross sections of these roads, particularly the R304 which carries the major traffic in the area, should, as a first option, allow for direct plot access, limited access or a service road/ boulevard. This is to ensure, not only the maximum exposure to economic opportunities along this road, but also to provide easy access for potential customers.

This will also allow the development facing the road to advertise and maximize exposure rather than turning their backs on these opportunities.

The third advantage of this proposal would be the fact that by downgrading and intensively landscaping these roads it would serve as a gateway to Koelenhof and it could also serve as a further gateway to Stellenbosch.

8.3.2 Bridge to replace level crossing

As noted previously, there are two level crossings in the Focus Area. These are potentially conflict areas between vehicular transport and rail transport. As it is proposed to intensify the existing vacant underdeveloped areas east of the railway line, the already busy M23 will increase its traffic over the portion of the road east of the R304. Therefore, it is proposed that a road bridge over the rail be investigated at this intersection to reduce the possibly dangerous and conflict situation.

As the second access road to Koelenhof, from the R304, south of the M23 is a lesser order road,

and will carry significantly less traffic, it is not proposed, as this stage, to erect a bridge at this position.

8.3.3 Tarring of Road

To consolidate the future development along the eastern edge of Koelpark and to partially improve the second access road, it is proposed to tar the remainder of that road at least until it connects back to the M23.

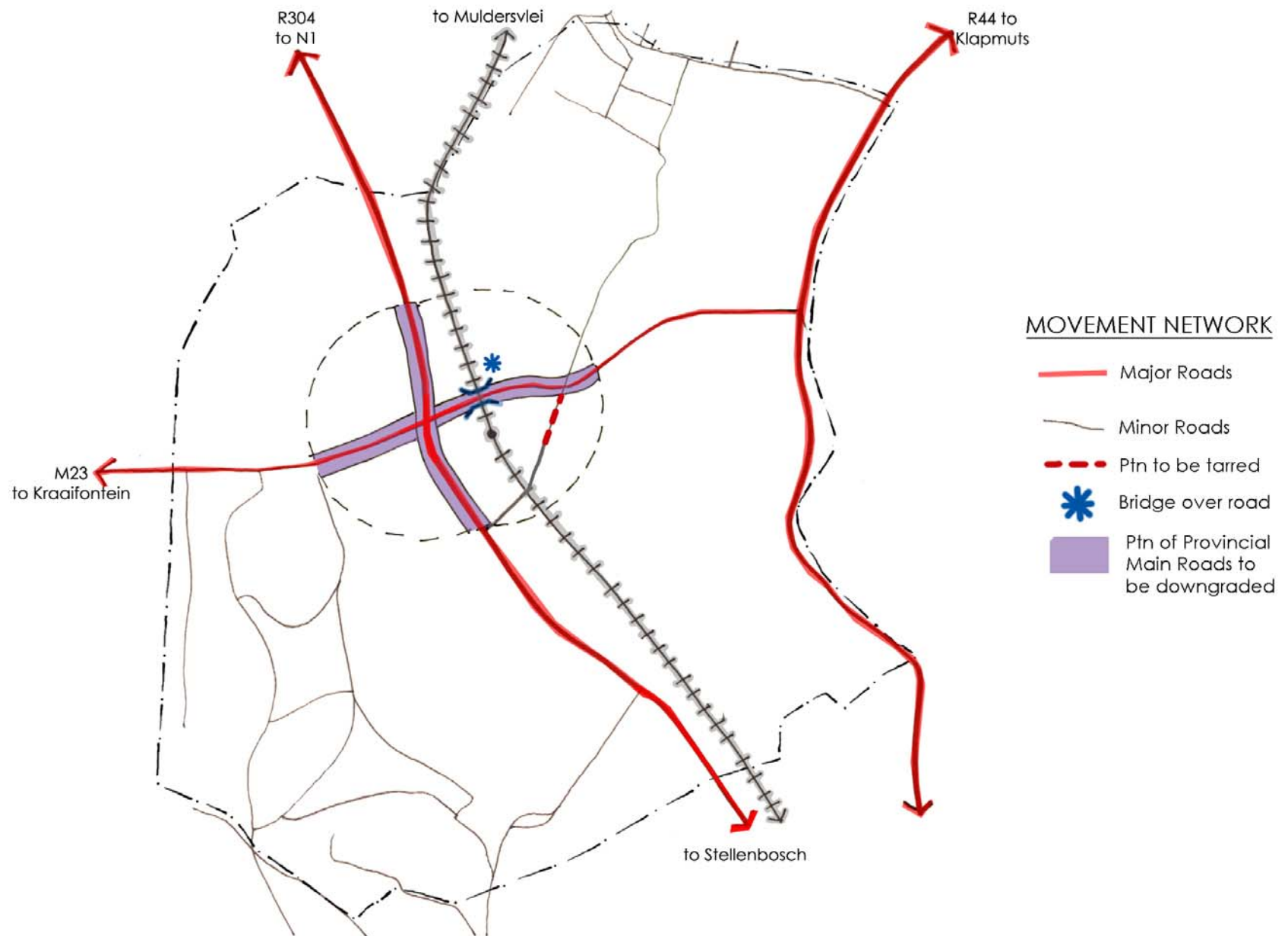


Figure 8.3 Movement Networks

8.4 OPEN SPACE NETWORK

The proposed open space network for the Koelenhof Focus Area is indicated in Figure 8.4

8.4.1 Landscaping

Landscaping of the R304 and the M23 within the Focus Area. This is to help with the treatment of the routes as scenic drives and the creation of downgraded roads and service roads.

The interfaces of the urban development with the agricultural areas, be landscaped to minimize the visual impact of the urban environment on the agricultural/ rural areas.

8.4.2 The River areas

It is proposed that the ecological corridors/ river systems be analysed and demarcated, cleaned, upgraded and landscaped and that pedestrian walkways be created along these to provide for a continuous network of walking, cycling or jogging.

It is proposed that these areas, along with its buffer areas, be protected from urban development and pollution.

8.4.3 The Flood areas

It is proposed that the floodlines (1:50 and 1:100) of the river be determined to delineate the development and flood areas. A 30m buffer along river corridors are proposed, depending on the position of the 1:50 year floodline.

It is further proposed that the flood areas be prepared as occasional sportsfields if appropriate.

It is proposed that the areas outside the determined flood plain be investigated for housing. These areas include Farm 74/23 and a portion of Farm 1090,north of Farm 65/42 (the Catholic Church and School) as indicated on the SDF. The proposed urban edge would at that stage have to be extended to incorporate the latter area.

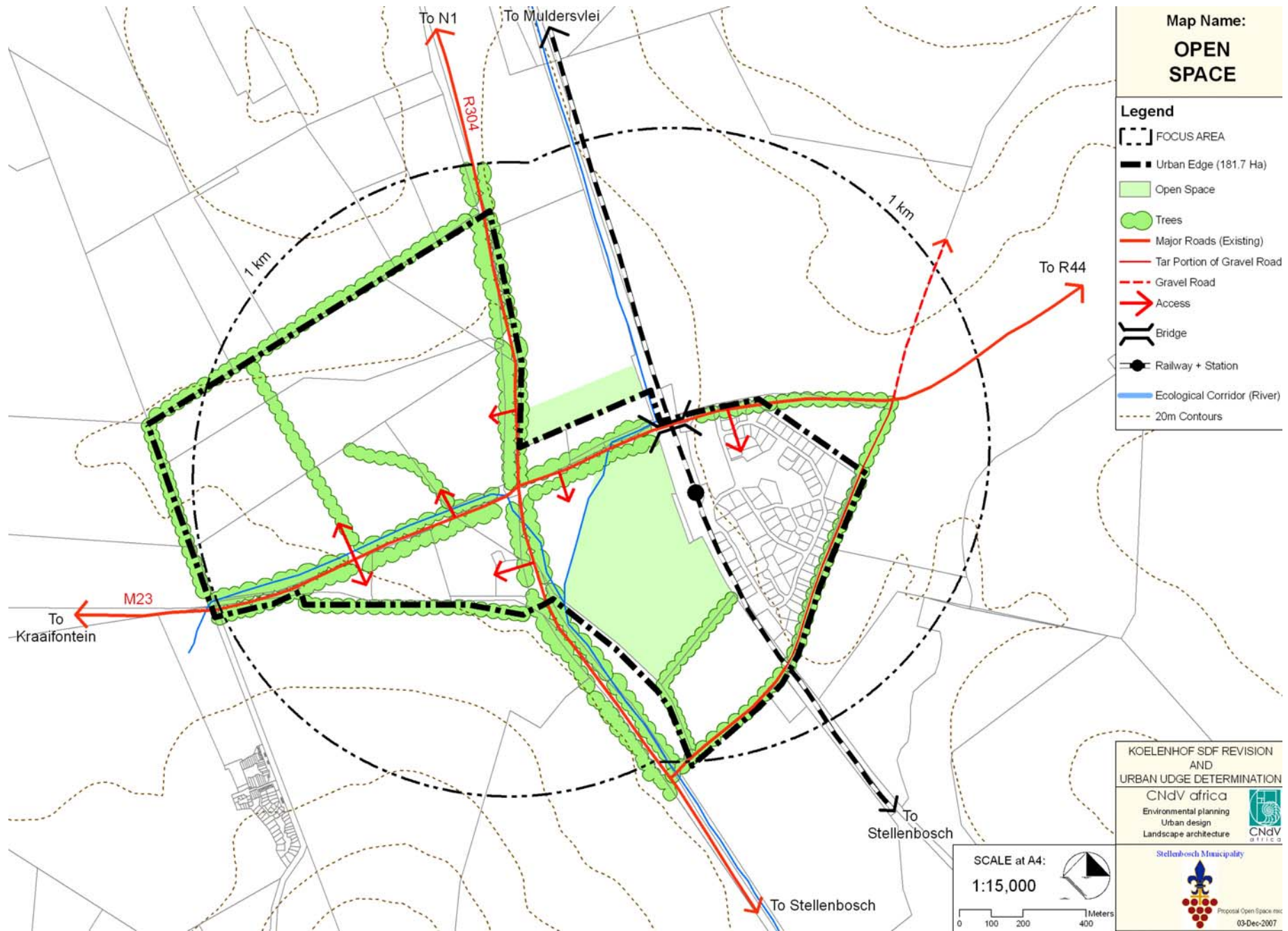


Figure 8.4 Open Space Network

8.5 URBAN EDGE AND DENSITIES

It is proposed that an Urban Edge be delineated around the proposed urban development area, in the Focus Area as indicated on Figure 8.5.

This urban edge start the second access road (Elsenburg Road) to Koelenhof at the south western corner of Lindelanie Place of Safety heading eastward along the road toward the M23. At the end of Koelapark it proceeds along the north western boundary of Koelpark until it reaches the M23. From the M23 it proceeds along the M23 in a westerly direction to the railway line. At the railway line. There it goes north along the eastern boundary of 1060 until it reaches a distance parallel to the northern boundary of Farm 42/65. It then proceeds further west parallel to the M23 along the northern boundary of Farm 42/65 (Roman Catholic complex). At the R304 it proceeds north toward the northern boundary of Farm 3/66. From this point it proceeds west towards the western boundary of Farm 9/65 it proceeds south till it reaches the M23, crosses the M23 and proceeds along the alignment of the old road, the northern boundary of Farm 32/74 until it reaches the R304, crosses the R304 along the eastern boundary of Farm 74/35 and proceeds south and connects back to the starting point.

It is proposed that these lines provide the lateral extent of urban development in the study area. This Urban Edge line provides for approximately 196ha of urban development land and is located, generally along the extreme lateral extent of the current urban development around the Focus Area, while still providing for significant future growth.

In line with the national and provincial initiatives to restructure settlements and to make them more efficient, it is proposed to keep this line as the Urban Edge until an average minimum density of 25 – 40du/ha is achieved within the Focus Area. No formal urban development is to be permitted beyond this line if it is not for agricultural or biodiversity development and not without strict conditions pertaining to density, form, footprint and size.

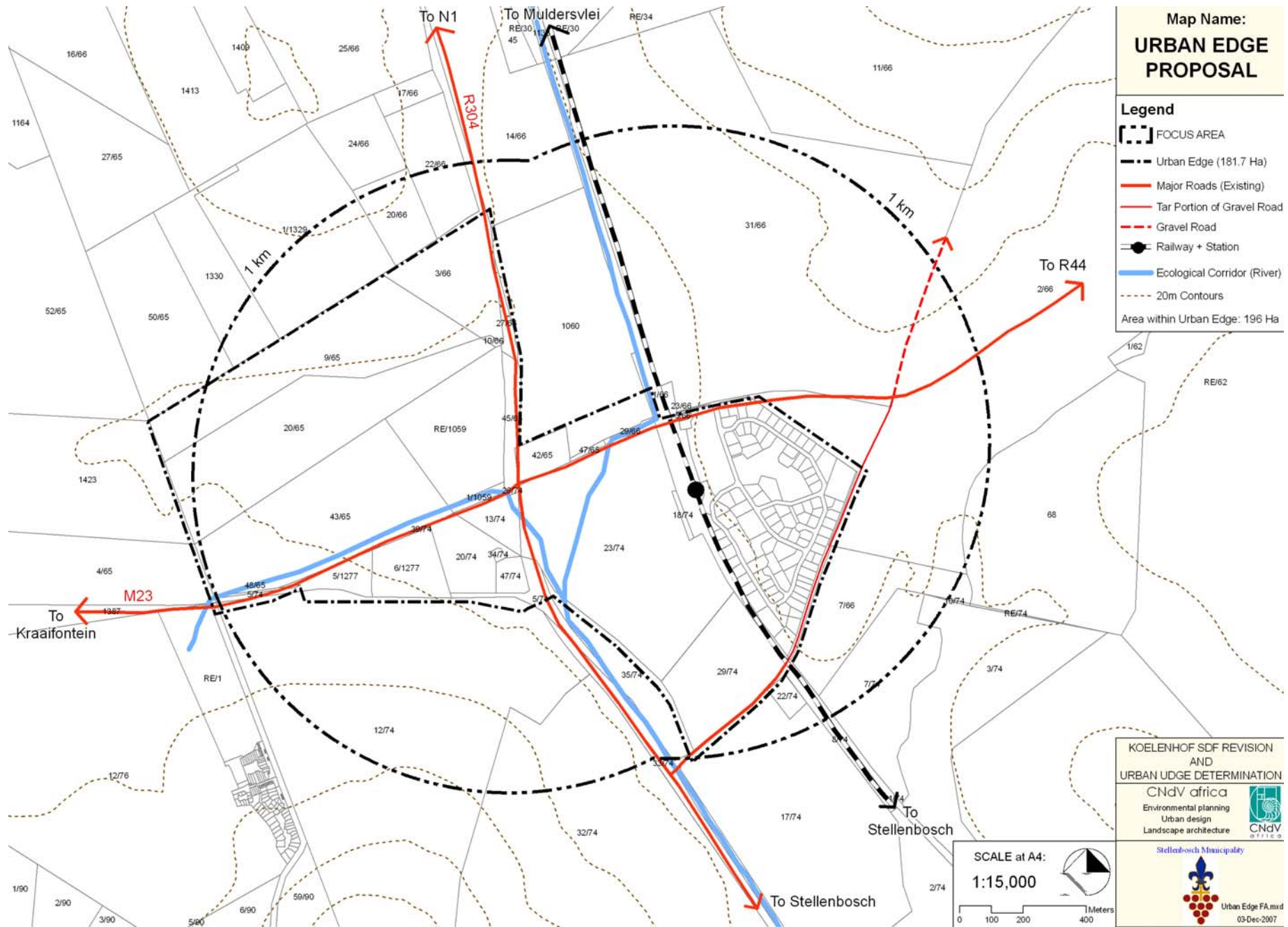


Figure 8.5 Urban Edge Proposal

8.6 RESIDENTIAL (HOUSING)

8.6.1 Subsidy Housing

Approximately 22,4ha of subsidy housing has been identified in three pockets of land as shown in Figure 8.6. These pockets are:

- part of the rehabilitated area on the Killarney Brickfields mines;
- along the eastern edge of Koelpark; and,
- the vacant land at south western quadrant of the intersection of the M23 and the second access road to Koelenhof.

At 25du/ha this should yield about 560 dwelling units that is twice the estimated amount based on the current housing waiting list.

8.6.2 GAP Housing

Two pockets of GAP housing, from R50 000 to R300 000, is proposed as an interface with the mixed development market related housing. This is to provide smooth transitions between income levels.

The GAP housing is proposed north of the M23 and west of the R304 on the mined areas that are to be rehabilitated, see Figure 8.5.

The one area abuts the M23 west of the proposed subsidy housing; and the other is along the R304, west thereof and north of the proposed subsidy housing.

The total area amounts to approximately 32,2ha. It is understood that some applicants on the waiting list fit into this category as well as providing for people outside the study area.

Given an average density of 25du/ha this could amount to about 800 dwelling units.

8.6.3 Market Related Housing

The area for market related housing is on the area north of the M23 and west of R304 on Portions 9 and 20 of Farm 65. This area amounts to about 30,5ha. Given an average density of 25du/ha this would yield about 765 dwelling units

The phasing of the above housing components could also be considered as part of one project where each land category (subsidy, GAP and market related) could provide for all three different mixes. However, an overall master plan per pocket of land would be required if the latter option is considered, to ensure that the minimum housing targets are achieved.

As there is little profit in subsidy housing, it is proposed that should the owners of the land in question wish to develop, that in lieu of obtaining development rights, the land for subsidy housing be ceded or sold at a reduced rate to the municipality and that the municipality champion the provision of low income housing.

In addition, the WCPSDF notes that a percentage of subsidy housing should be provided in relation to all medium and high income housing (GAP and Market Related Housing). Therefore the final model for the owners and municipality needs to be considered through a process of negotiations.

8.6.4 Ideal Density

A total of 1230 units would be possible at 25du/ha using the 83,40ha identified for Subsidy, GAP and Market Related housing.

Given the total extent of the Focus Area, 196ha, 4900 units would have to be built to achieve 25du/ha.

This would mean that the residential components would have to develop at 58,75du/ha to achieve the average density 25du/ha for the Focus Area.

The above then relates, given the size of each category of the residential components in relation to the total area identified for residential, to the following number of units per category:

Category	Size (ha)	Percentage	Number of Units
Subsidy	13,2	16%	776
GAP	36,6	44%	2150
Market	33,6	40%	1974
TOTAL	83,4 ha	100%	4900

Table 8.1

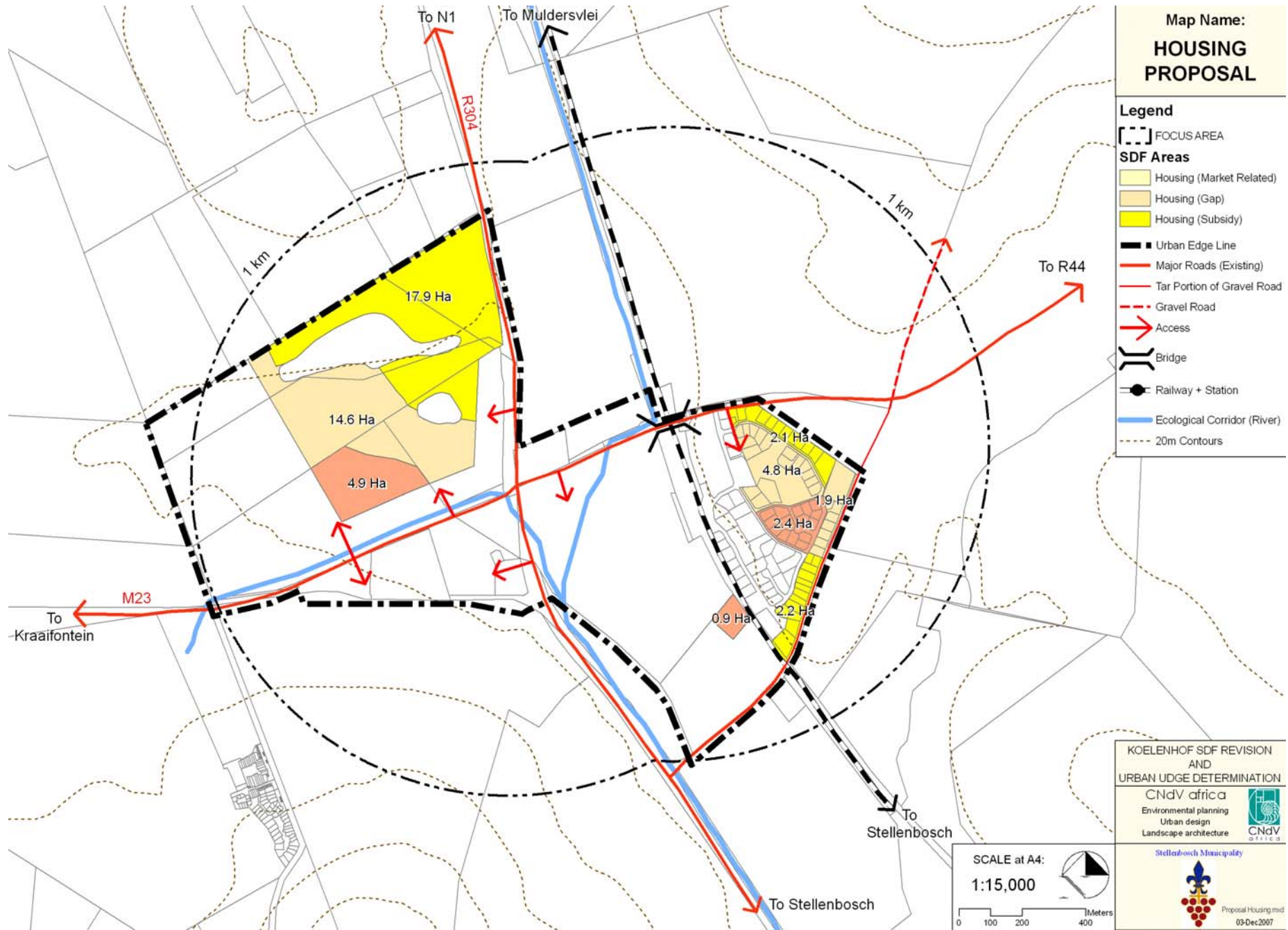


Figure 8.6 Housing Proposal

8.7 INDUSTRIAL, see Figure 8.7

Industrial development is proposed at Koelpark and on the current industrial erven south of the M23, Portions 5 and 6 of Farm 1277. It is proposed to reduce the size of the current industrial erven (mining area) to make land available for housing after the mines have been closed. This is because of the very ideal location of the land and to help with the future housing need of Koelenhof and some of Stellenbosch and its surrounds.

The fact that most of the currently industrial zoned units in Koelpark are undeveloped suggest that the current amount of industrial erven available may be too excessive based on the need. A total area of 22,6ha is therefore made available, through this proposal, for industrial development.

8.8 MIXED USE DEVELOPMENT, see Figure 8.7

Mixed use development opportunities (29,6ha) are proposed for office parks, retail, tourism development and mixed with residential at the following locations:

- West of the R304 and north of the M23 on a strip along the M23 and R304;
- West of the R304 and south of the M23 on a strip along the M23 and R304;
- East of the R304 and south of the M23 at the intersection strip along the M23 and R304;
- At the station precinct to incorporate the existing residential units on both sides of the railway line.

The type of mix of this station area ought to be mainly commercial and residential whereas at the other locations it could have a more flexible mix.

The tourism development aspects could include local economic development support features such as periodic markets, empowerment and incubation centres and skills training centres.

These are also to help with LED and skills development.

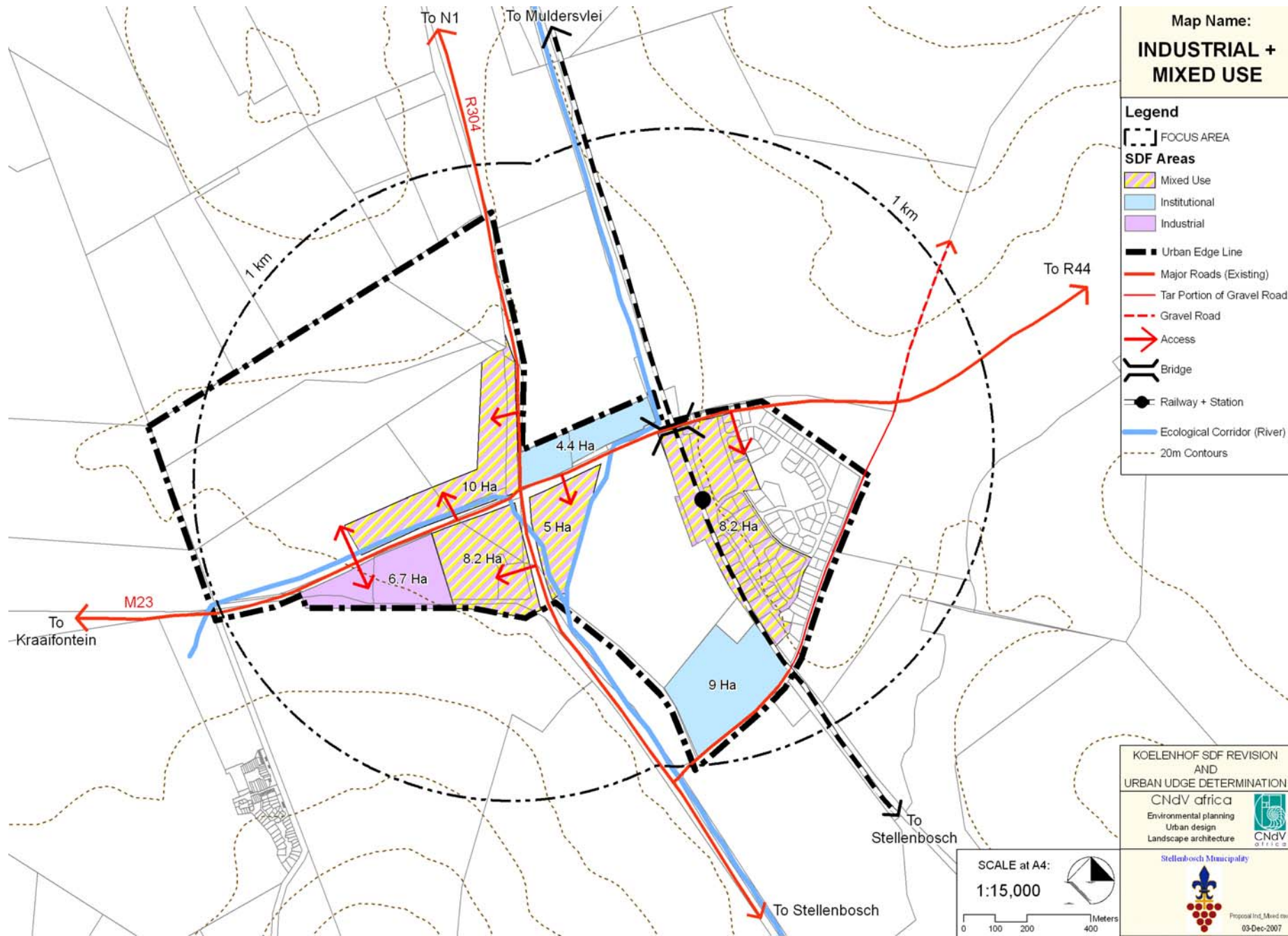


Figure 8.7 Industrial and Mixed Use Proposal

8.9 INSTITUTIONAL SITES

The current institutional sites, namely the Roman Catholic Church school and convent on Portion 42 of Farm 65; Lindelani Place of Safety on Portion 29 of Farm 74 and the undeveloped site in Koelpark are retained as institutional sites.

It is proposed to add the area between the Catholic Church school and convent and the railway line on a portion of Erf 1060 as an additional site for a more formal multi-purpose centre, periodic market, tourism information centre, business hive incubation centre, etc. This area is approximately 2ha.

The total area for all the institutional sites will then amount to 13.1ha.



Figure 8.8 Roman Catholic Church, School and Convent



Figure 8.9 Lindelani Place of Safety

8.10 HUMAN DEVELOPMENT

The following are proposed to assist with the human development need,:

1. The following programs, from the IDP wish list of the Ward and the Municipality will be required in the area:
 - 1.1 Unemployment and job creation;
 - 1.2 Business opportunities and LED;
 - 1.3 Primary health care;
 - 1.4 Youth and women empowerment programs; and
 - 1.5 Multi-purpose community centre.
2. Establish the multipurpose centre that is linked to the business incubation and training centre and the periodic markets on the identified portion of Erf 1060;
3. The multi-purpose centre is also to function as the period offices of various government departments, needing to perform services in the study area, see Figure 8.10.
4. Appoint a Municipal program / project co-ordinator to initiate various human development training programs, including health, skills development, business development and other programs, based on the surveyed need of the people in the study area;
5. Establish a task team / steering committee from the general public, business and government to initiate the setup of the human development program that includes the proposals noted above;

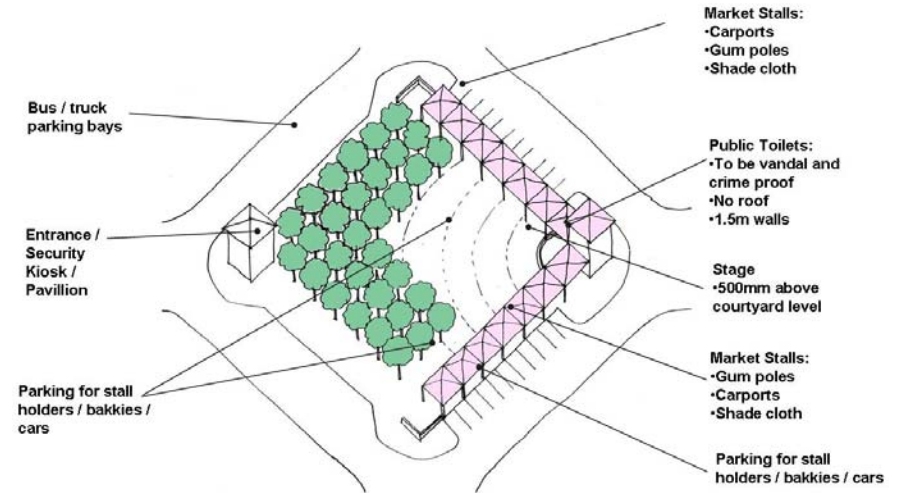


Figure 8.10 Periodic services centre supporting infrastructure

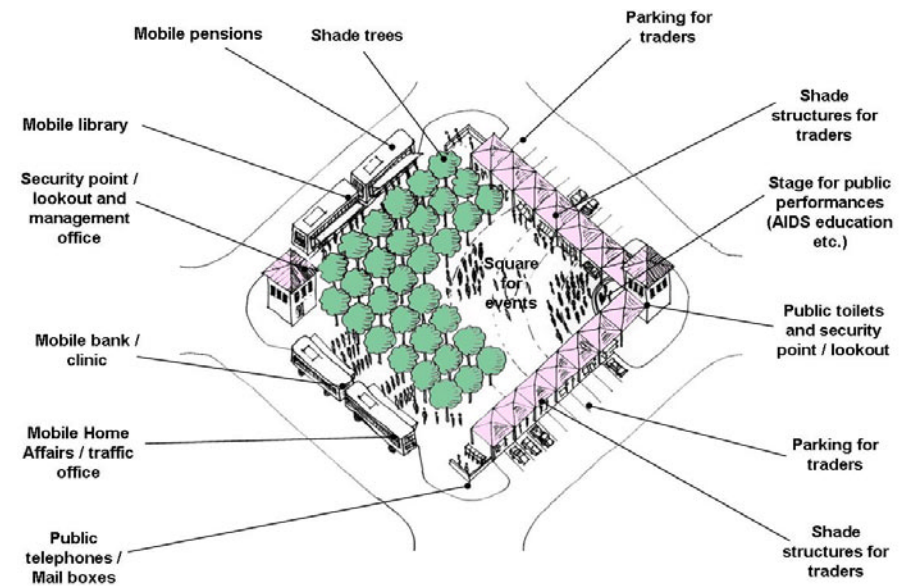


Figure 8.11 Periodic services centre activities

8.11 ECONOMIC DEVELOPMENT AND TOURISM

The following are proposed to facilitate economic development:

1. Retain the existing shop at the M23 intersection with the railway line and at the R304 and M23 intersection, see Figure 8.12 and 8.13;
2. Facilitate and encourage the upgrading of the station precinct in the form of a mixed use development (retail and housing);
3. Establishment a periodic market at on the identified portion of Erf 1060;
4. Further the proposal to downgrade the M23 and the R304 to allow for commercial development along these routes; and
5. Further the proposal to develop a business incubation and training centre on a portion of Erf 1060;
6. Establish a tourism information centre along with the multipurpose centre discussed above to promote the area;
7. Set up a task team composed of all relevant parties and driven by the Municipal LED officer to further the above strategies;
8. Retain and enhance the scenic quality of the R304 and the M23 by initiating a landscaping and clean up program along these routes.



Figure 8.12 General Dealer Shop



Figure 8.13 Garage Development

8.12 HERITAGE ASPECTS

Stellenbosch and its surroundings are renowned for its architectural and heritage character. Therefore, it is important that these elements are retained and conserved as far as possible in all areas in this municipality.

Therefore, it is proposed to initiate a study to list the important heritage features (buildings, landscape, etc) in the study area and to publish these along with or as part of the tourism and economic development strategy for the area.

8.13 ARCHITECTURAL AND LANDSCAPE DESIGN

Urban design, architectural and landscape guidelines should be prepared to control the function and appearance of the streets and potential future gathering places in the area.

The above guidelines should control, among other things, building styles and heights, materials and colours, advertising, roadways and sidewalk pavements, encouraging colonnades and other devices to shelter pedestrians and landscaping and tree planting, and respect historic buildings and farmsteads in the study area.

All new buildings and structures are to comply with these guidelines.

The composite SDF is seen on Figure 8.15.



Figure 8.14 Appropriate architectural character

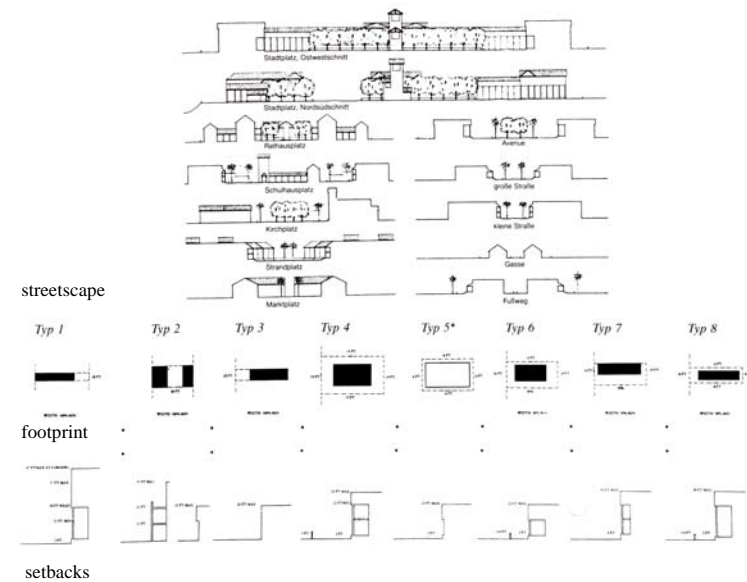


Figure 8.15 Examples of Urban Design Guidelines

8.14 LAND REFORM

The study area comprises about 3 000ha of agricultural land, including the smallholdings. The National Strategy for Land Reform in regard to agriculture is to transfer the ownership of at least 30% of all white owned agricultural land to black ownership (in various forms) by 2014. Currently the country, as a whole, is way behind on this target.

Assuming that the entire 3 000ha of agricultural land in the study area is white owned, this would mean that by 2014 approximately 900 ha would have to be transferred into black ownership for agricultural use, see Figure 8.14. To help achieve this goal this SDF proposes the following:

- 1 Initiate a land reform study that surveys the farmworkers in the area to determine:
 - 1.1 the number of farmworkers;
 - 1.2 their farming skills and interest levels;
 - 1.3 amount of farmworkers that would potentially moving of farms in the near future;
 - 1.4 the potential for land reform on farms; and
 - 1.5 possible ways to facilitate the land reform.
- 2 Set up a task team, headed by a Municipal LED officer, in conjunction with the community and the various interested and affected government and other departments to steer the initiative and to get a land reform program initiated.

The composite SDF is seen on Figure 8.17.

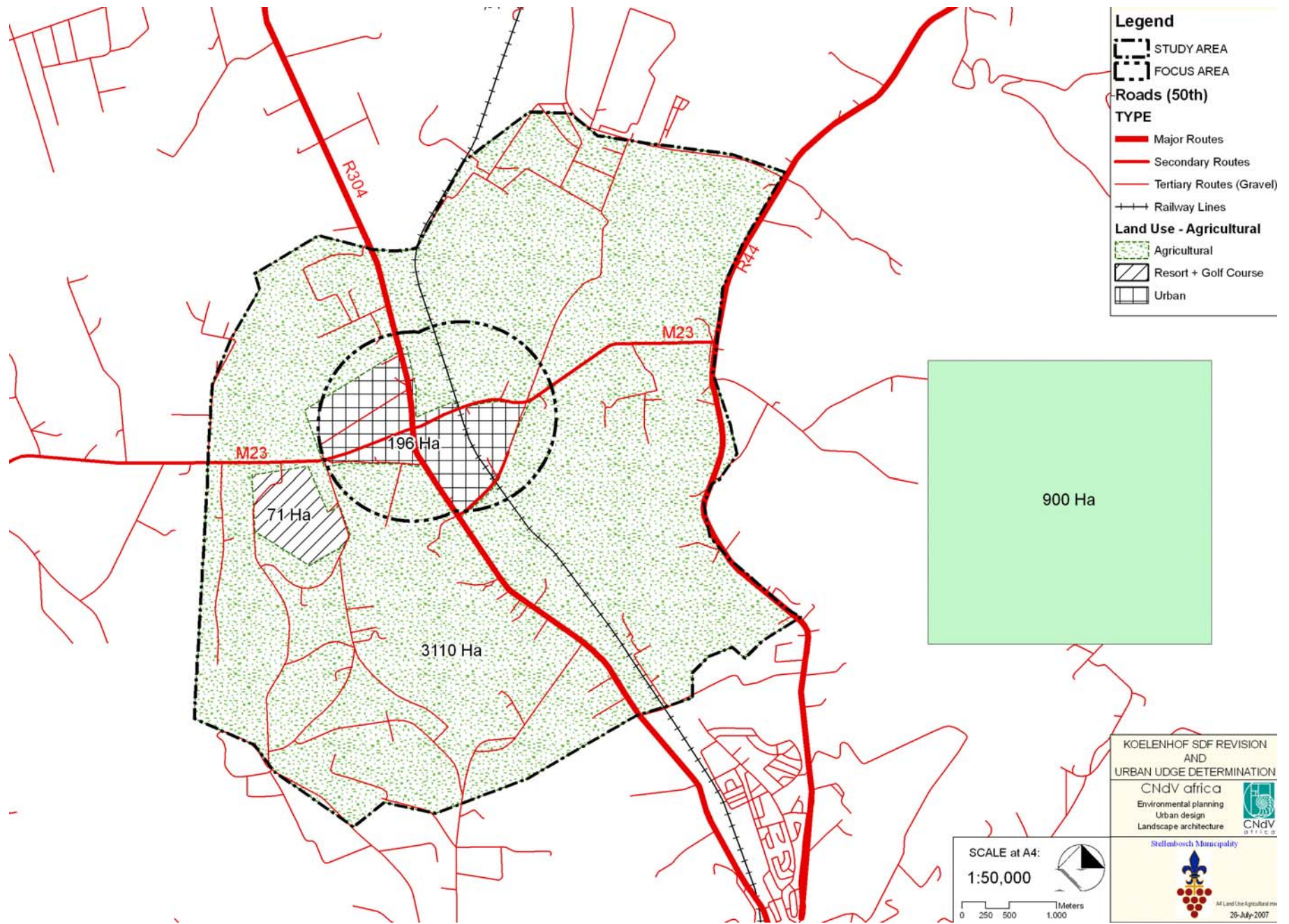


Figure 8.16 Land Reform

LAND USE	Area Ha	%
Housing (Market Related)	22.1	5.2%
Housing (Gap)	21.3	5.0%
Housing (Subsidy)	8.3	2.0%
Institutional	13.4	3.2%
Mining	28.1	6.6%
Industrial	6.7	1.6%
Mixed Use	38.5	9.1%
Open Space	1.7	0.4%
Sportsfields	1.4	0.3%
Agriculture	249.7	59.0%
Investigate Development	25.3	6.0%
Dam Areas	6.5	1.5%
TOTAL (Focus Area)	423.0	100%

KOELENHOF DRAFT SPATIAL DEVELOPMENT FRAMEWORK

- Proposed**
- [Dashed Box] Focus Area
 - [Yellow] Housing (Market Related)
 - [Light Orange] Housing (Gap)
 - [Orange] Housing (Subsidy)
 - [Pink] Institutional
 - [Grey] Mining
 - [Purple] Industrial
 - [Diagonal Lines] Mixed Use
 - [Light Green] Open Space
 - [Green] Sportsfields
 - [Green with Dots] Agriculture
 - [Light Green with Dots] Investigate Flood Lines
 - [Light Green with Dots] Development Potential
 - [Dashed Line] Urban Edge (181.7 Ha)
 - [Arrow] Consider Extending Urban Edge If Developable
 - [Red Line] Tar Minor Road
 - [Red Arrow] Access
 - [Black Arrow] Bridge Over Rail
 - [Green Circle] Trees
 - [Blue Line] Ecological Corridor (River)
 - [Star] Investigate Residential (Subsidy/Gap) Development Potential
- Existing**
- [Thin Grey Line] Cadastral
 - [Red Line] Major Roads
 - [Dashed Red Line] Gravel Minor Road
 - [Black Circle] Railway + Station
 - [Blue Area] Dam Areas
 - [Dashed Line] 20m Contours
- CNdV africa
Environmental planning
Urban design
Landscape architecture
- Stellenbosch Municipality
- SCALE at A4:
1:15,000
- 0 100 200 400 Meters
- SDF FA.mxd
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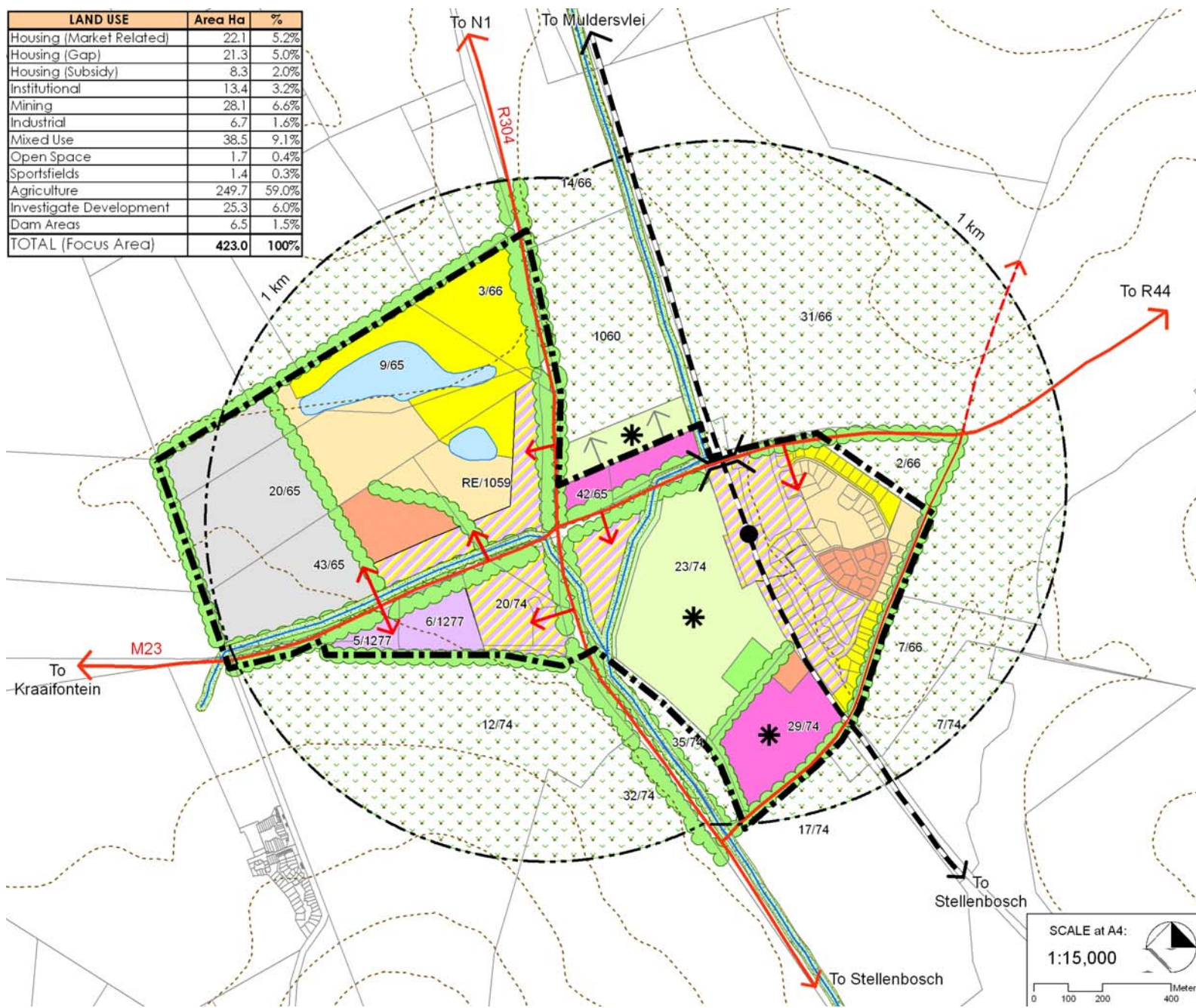


Figure 8.17 Composite Koelenhof SDF

9. IMPLEMENTATION

9.1 Projects

9.1 PROJECTS

Objectives	Strategies	Projects	Responsible
1 Create an Integrated Human Settlement	1 Establish an urban edge		
	2 Conveniently locate urban activities and promote public and non-motorised transport	<ol style="list-style-type: none"> 1. Investigate the downgrading of the main roads through the Focus Area 2. Redesign the road cross sections to facilitate cycle lanes. 3. Widen the main roads/ redesign the cross section to construct / facilitate cycles lanes. 4. Investigate the possibility of a constructing a bridge over the rails at the M23 level crossing. 5. Construct a bridge over rail at the M23 level crossing. 6. Tar the second entrance road to Koelenhof 	
	3 Provide for and promote a mix of uses in developments	<ol style="list-style-type: none"> 1. Encourage the development of the parcels identified for mixed use development 	
	4 Promote socio-economic integration		
	5 Promote residential development of an average density between 25 and 40 du/ha in urban areas	<ol style="list-style-type: none"> 1. Survey the housing need to update the housing waiting list. 2. Initiate the feasibility for a subsidy housing project. 3. Negotiate the acquisition for land for a subsidy housing project. 	
2 Deliver human development and basic need programs where required	1 Promote economic empowerment programs and opportunities	<ol style="list-style-type: none"> 1. Acquire land for construction of a multipurpose hall, periodic market. 	

		<ol style="list-style-type: none"> 2. Construct a multipurpose hall / tourism centre on the identified site. 3. Design and construct the periodic market. 4. Initiate a survey to determine the empowerment/ skills training programs required. 5. Initiate empowerment programs for health, education, skills training and economic development (acquire land) 6. Level the ground for sport playing fields in the season flooding areas subject to the floodline studies and acquisition/ use / lease arrangement of the land. 	
	2 Initiate land reform programs as part of the LED Strategy	<ol style="list-style-type: none"> 1. Initiate a farmworkers' survey – see section 8.14 2. Set up a land reform task team. 	
	3 Establish a period market along with government services to be developed into a permanent market over time	<ol style="list-style-type: none"> 1. Initiate the feasibility of establishing a periodic market as part of the LED strategy for the municipality. 2. Initiate a feasibility study for establishing a business incubation centre within the multipurpose hall or linked to it. 3. Establish a tourism information centre 4. Set up a an local LED task team to drive the above processes. 	
3 Protect biodiversity, agricultural and heritage resources	1. Prevent the inappropriate conversion of rich rural areas and existing agricultural activities		
	2. Protect the ecological corridors	<ol style="list-style-type: none"> 1. Determine and map the 1:50 year and 1: 100 floodlines. 2. Prepare management guidelines for these river areas. 3. Initiate a river clean up program 	

	3. Create scenic routes as a gateway into Koelenhof	<ol style="list-style-type: none"> 1. Initiate landscaping and creation of a gateway along R304 and M23 2. Get permission to downgrade the roads. 	
	4. Promote the historical farmsteads in the area	<ol style="list-style-type: none"> 1. Survey and list all historical elements in the study area 2. Publish the surveyed information as part of the tourism strategy for the local area. 	
	5. Discourage urban development outside of urban edges		
	6. Prepare urban design and architectural guidelines, for these to be applicable to all new developments, including commercial and industrial.	<ol style="list-style-type: none"> 1. Appoint appropriately qualified consultants to prepare architectural and landscape design guidelines. 	

10. PUBLIC PARTICIPATION PROCESS

10.1 PUBLIC PARTICIPATION

Three general public meetings were conducted through the process. The first was held on the 1st of March 2007 to present the analysis information and to determine the key issues that ought to be addressed in the project. The second meeting was held on the 8th of August 2007 and presented the draft proposals. The third meeting was held on the 19th of November 2007 and dealt with the presentation of the revised proposals based on the public inputs to the initial proposals.

At the meeting of the 8th of August 2007 it was agreed to establish a working committee of 13 members representing the interest of the landowners (6 members) and the interest of the general community (6 members) and a Sister from the Roman Catholic Church. The terms of reference for this committee was to assess the proposals, collate inputs and to advise on the revised proposals. This committee met on the 25th of September to receive comments on the proposals and on the 14th of November to discuss the revised proposals.

The working committee also agreed that the consultants have meetings with the individual landowners who requested separate meetings. Three meetings were held with individual landowners who requested such an opportunity, on the 19th of October 2007 (two meetings) and the 21st of November 2007. In addition, a meeting with the community representatives was held on the 23rd of October 2007 to provide a separate session for their specific concerns.

The notices to the general public meeting were advertised in the Eikestadnews, Die Burger, Cape Time and Cape Argus. In addition, handbills were also delivered to invite people to the first general public meeting.

The draft proposals were advertised in the above-mentioned newspapers to allow for comments from the 30th of July 2007 to 1st of September 2007. The comment period was later extended to the 21st of September 2007, upon requests from a number of individuals.

Approximately 150 persons, on average, attended the general public meetings. The final general public meeting held on 19th November expressed an approval of the final proposals. All the public meetings were chaired by Councillor Biscombe.

The draft SDF and urban edge proposals were circulated to all the Municipal branches as well as all government departments for their comments.

10.2 MAIN ISSUES RAISED AND HOW THESE WERE ADDRESSED

The following key issues were raised during the public participation process and addressed in the study:

10.2.1 No individual consultations with landowners

From the second public meeting it was revealed that there is a need to individually consult with some of the landowners. The working committee formed adequately addressed this concern and also provided, through its process, an opportunity for individual meetings between consultants and the individual landowners who requested such an opportunity.

10.2.2 No Municipal / government land available in the Study Areas

The land ownership analysis and various comments revealed that there are usable no municipal / government owned land in the study area. Hence, the urgent need for subsidy housing is compounded by the need to provide land for housing. In this regard, land for subsidy housing has been indicated on privately owned land and discussions with the affected landowners were held to test the proposal. The landowners conditionally consented to the proposals.

In addition, it is also proposed to investigate the acquisition of an unused portion of land from the Lindelanie Place of Safety / Department of Public Works and, should the place of safety close down, to investigate the possible utilisation of this facility, when converted, to residential opportunities.

10.2.3 Need for housing: main issue

All the meetings emphasised that the need for subsidy housing is the main and most urgent issue that needs to be addressed in the Study Area. In this regard a detailed housing needs list ought be prepared. The proposals make provision for the current housing

needs, based on the 140 names on the housing waiting list, and for limited projected growth in this regard.

It was also noted that the farmers in the area are willing to contribute financially towards the erection of subsidy housing in the study area.

10.2.4 The Use of the municipal land in Culcuttabos

It was proposed through some comments to use this land, that is more than 4km away from the core of Koelenhof, for subsidy residential development. However this proposal was not favoured as it would essentially be outside the urban edge for the Koelenhof hamlet development. The community representatives also rejected this proposal. This is because it would mean that the people would be far from the facilities and did not comply with the sustainable integrated human settlement principle of using walking distances as a measure of designing urban areas.

10.2.5 Revising the proposals as it affects the mining area

The proposals affecting the mined and proposed mining areas were amended to reflect the fact that mining will continue for a number of years into the future. This was also done to relocate the position of the subsidy housing areas away from the areas requiring more rehabilitation. In turn, to allocate the areas, requiring more rehabilitation, for higher income housing.

10.2.6 Amending the proposals for Koelpark

The initial proposal to retain Koelpark as an industrial area, was amended to introduce more mixed use and residential development. This was mainly because the area was never developed as industrial, after approvals have been received almost a decade ago, and to help accommodate the need for housing east of the railway line.

10.2.7 Revising the urban edge to exclude land now being utilised for agriculture

The request to earmark additional land for agriculture was acceded to and the proposed urban edge line was revised to exclude the areas to be earmarked for agriculture.

10.2.8 Revising the proposals for the areas possibly affected by flooding

The initial proposals suggesting that the areas possibly subject to flooding be earmarked for open space was amended to determine the floodline position and to earmark these areas outside the determined floodplain for residential (Subsidy and GAP) development.

10.2.9 Housing only to be provided for the Koelenhof residents

A request that featured regularly was that the housing in the areas be earmarked only for the residents of Koelenhof. It was noted that the SDF could not accommodate such a request as it was not constitutional but that subsequent housing projects should deal with the criteria for determining the housing beneficiary list.

10.2.10 Farmers want to assist in providing housing and give ownership– each farmer has a responsibility

The willingness of the farmers and landowners to financially and otherwise assist with the provision of future housing projects was noted.

10.2.11 Restrictions to the location of certain uses

Comments were made that housing should only be provided east of the R304 and that Industrial sites should only be provided west of the R304. This proposal from an individual was not accepted as it would not lead to an integrated and sustainable settlement.

10.2.12 Bridge over the railway line too expensive

Comments were received noting that the provision of a bridge over the railway line would be too expensive and should be aborted. In this regard it was noted that the provision of a railway boom should be initiation in the interim of the construction of a bridge over the railwayline. The safety aspect, particularly with one commemoration of the Faure boom accident, was considered an eye opener. The revised proposals reflected this change of a boom in the interim.

10.2.13 Downgrading of the through roads

The proposal to downgrade the through roads in the Study Area was met with some confusion as the comments received suggested that the traffic will be affected if the roads are not longer the “grade” or “status” that it currently enjoys. This confusion is corrected in the report as the downgrading does not imply the physical quality of the road but more the fact that downgraded through roads, over the extent of the Study Area, would permit greater access to proposed mixed use developments alongside the roads.

10.3 RECOMMENDATION

That the document be adopted as a guiding document to guide the development in the Koelenhof Study Area.

11. CONCLUSION

Koelenhof has a number of challenges that it faces, ranging socio economic challenges of amongst others low income and education levels, housing needs, infrastructural challenges to natural environmental challenges such as the river system and valuable agricultural land and pressures for more urban development.

Given the challenging context it is important that the development of Koelenhof is guided. Therefore, it is important that only appropriate growth at appropriate locations be permitted.

Furthermore, the vision of retaining the rural / agricultural feel of the settlement is to serve as the main criteria for development in the settlement. Therefore, the development of Koelenhof into a rural agricultural hamlet instead of suburbia (wall to wall housing) is an outcome with this aforementioned vision that should be encouraged, pursued and defended.

Having stated the above, it is relevant to note that Koelenhof as a hamlet can provide some relief to the Stellenbosch Housing need. The urban edge has been set to accommodate Koelenhof's own anticipated natural growth and some growth from Stellenbosch to help achieve the density target of 25 dwelling units per hectare.

To retain the development of the area in a systematic and coherent way it will be important for all roleplayers to buy into this vision. In this regard the buy in and will to execute, defend and promote the aforementioned vision for Koelenhof from all politicians, officials, land owners and general public will be vital for the success of the proposals and projects in this document.

ANNEXURE 1 : KEY SPATIAL DEVELOPMENT PRINCIPLES

The following spatial development principles, drawn from appropriate national and provincial legislation, inputs from the public and environmental, planning and development issues as identified by the municipal officials, are proposed for the Stellenbosch Municipal SDF.

1. OVERALL GUIDING PRINCIPLES

The following overall guiding principles are proposed:

1.1 *General*

- Embrace the principles of sustainable development, as defined by the National Environmental Management Act (NEMA): " the integration of social, economic, and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations."
- Develop mechanisms to ensure the efficient, economic and effective management of resources in an integrated manner.
- Commitment to the goals and targets of Agenda 21.

1.2 *Urban Environment*

- Promote Smart Growth in Stellenbosch with a special focus on quality rather than quantity.
- Foster and promote the principles of bio-regional planning.
- Support and promote the principles for land development as stipulated in the Development Facilitation Act No 67 of 1995, Section 3 which promotes, inter alia,;
 - the speedy delivery of land development that provides for security of tenure for the widest possible range of tenure alternatives;
 - that development areas be judged on its own merits
 - that the competent authority, in this case the municipality, co-ordinate the interests of various sectors involved in or affected by land development so as to minimize conflicting demands on scarce resources.
 - On the stimulation of the effective functioning of a land development market based on open competition between suppliers of goods and services.
- Create sustainable and viable urban settlement (urban villages) by :
 - reinforcing existing urban and industrial nodes and the (transport) links between them, rather than developing new nodes and new links

- Implement strong urban edges and prohibit urban sprawl through densifying and integrating the urban settlements.

1.3 *Natural Environment*

- Protect the special natural features by :
 - Avoiding the loss of natural habitat in threatened ecosystems and priority ecological corridors
 - Preventing the loss of high potential agricultural resources and especially from urban development in the form of urban sprawl.
 - Protecting water resources and the functioning of freshwater ecosystems

1.4 *Socio Economic*

- Show bias in favour of the needs of the urban and rural poor in making the town more sensitive to the aspects of affordability and accessibility of the poor.
- Delivery of a public service according to the eight principles of Batho Pele which stresses that people be put first.
- Build upon the comparative economic advantages of the rural areas, villages and towns; namely, residential desirability, tourism, agriculture and education.
- Comply with the National Spatial Development Perspective (NSDP) investment guidelines that motivates that:
 - Future settlement and economic development should be channelled into corridors of existing and potential development opportunity and existing nodes that are adjacent to or link the main centres.
 - Existing settlements should, where appropriate densify instead of extending or developing new settlements.

2. BUILT ENVIRONMENT GUIDING PRINCIPLES

2.1 *Restructuring and Integration*

- Develop an urban growth strategy that focuses on:
 - achieving the necessary speed of delivery of services, e.g. infrastructure, housing, etc;
 - a housing delivery programme that concentrates, amongst others, on the form, character and location of housing developments within Stellenbosch;
 - the appropriate proximity of housing to employment, recreational and other facilities; and

- urban integration and urban regeneration;
- Restructure and integrate settlements according to the principle of accommodating the complete cross-section of the settlement's socio-economic group within walking distance according to the concept of a gradual socio-economic gradient.
- At least 50% of urban activities; work, residence, transport, recreation and shopping, must be accessible on foot. Walking distance should become the basic unit of distance and access within urban settlements.
- Within the urban edge densities should be arranged in a pattern from lowest densities on the periphery to highest densities in the most accessible areas, generally along major routes and within the centre of the settlement. This implies that low income housing, where densities are generally in the range of 40 to 60 dwelling units per hectare, should be nearer the centre and major routes rather than the periphery.
- 30% of all residential urban development proposals over 20 units should address the social housing market whose parameters shall be determined from time to time. Currently, this would include dwellings in the R75 000 to R250 000 price range, i.e. that part of the market generally not being addressed by the private sector.
- Provide a range of realistic levels of public housing, services and infrastructure rather than a single maximum level;
- Accessibility and affordability of public transport should be promoted in historically disadvantaged areas and the poorer communities.
- Promote integrated and multi-modal transport (public, private and non-motorised) with an emphasis on the safe movement of cyclists and pedestrians and the efficient use of road and rail based public transport modes (with safety as a priority). There should be a shift away from private transport.

2.2 *Urban edge*

- Proclaim and interim urban edge, based on the current extent of urban development and any valid township approvals that have not expired. This urban edge should be enforced until such time as urban edges are identified and proclaimed.
- These urban edges, outside of which no urban development is to occur that does not comply with these principles, should enable settlements to achieve average dwelling unit densities of 25 dwelling units per hectare or 100 people per hectare within the next ten years.
- Contain urban sprawl further through :

- intensifying urban areas by means of infill projects and promoting higher densities.
- absorbing population growth within existing urban areas and settlements and not permitting urban development outside the urban edges for the next ten years.

2.3 *Urban design*

- Conserve the architectural, historic, scenic, and cultural character of the settlements, forms and rural areas in the Stellenbosch Municipality.
- Planning and design of urban settlements and the various activities within them should occur within urban design frameworks that manage the interfaces between public and private space, ensure the creation of attractive streets and squares and the successful coordination of urban activities in space.

3. **NATURAL ENVIRONMENT GUIDING PRINCIPLES**

3.1 *Biodiversity*

- Avoid all further loss of natural habitat in critically endangered ecosystems
- Further loss of natural habitat in endangered ecosystems should take place only if there are significant biodiversity offsets/gains
- Identify priority ecological corridors. In these corridors, avoid further loss of natural habitat and, where ecologically and economically feasible, restore connections between remaining natural habitat.
- Encourage community-based natural resource management.
- Apply the polluter pays principle where the cost of "repair/rehabilitation and remedying" is borne by those responsible for harming the environment.
- Provide special attention to sensitive, vulnerable, highly dynamic or stressed ecosystems or systems that require specific attention that are subject to significant human resource usage and development pressure.

3.2 *Water resources*

- Determine, implement and monitor the ecological reserve for rivers, focusing first on those that are still in class A, B or C
- Prevent over-abstraction of groundwater resources (need to determine thresholds for sustainable levels of utilisation)
- Implement water demand management strategies that involves:
 - Upgrading and maintaining bulk infrastructure
 - Site-level measures (e.g. rainwater harvesting and multi-flush toilets)

- Promote and support the establishment of Catchment Management Agencies, and integrate and streamline their work with the municipality and other relevant agencies
- Place the onus on all water providers to show that their use of water is sustainable.

3.3 *Agricultural resources*

- Actively protect against urban development and urban sprawl and promote the appropriate agricultural use of productive and potentially productive agricultural land.
- Work with the land reform programme to ensure that land redistributed to emerging farmers is agriculturally viable and does not further endanger threatened ecosystems, including freshwater ecosystems

3.4 *Outside the Urban Edge*

- No urban development shall be permitted outside the urban edge except where:
 - it can be demonstrated that it will contribute to achieving the financial sustainability of biodiversity conservation on the property concerned;
 - it can be demonstrated that it will contribute to agricultural resource conservation on the property concerned
 - it can be demonstrated that it will contribute to significant long term economic growth and employment. Socio-economic

4. **SOCIO-ECONOMIC GUIDING PRINCIPLES**

- Actively involve the potentially affected communities in the planning the decision making of aspects that affect their lives and facilitate the development of skills and capacities of these communities through these processes.
- Programs aimed at improving at improving human development indicators should be co-ordinated between all departments at all spheres of government as necessary.
- A co-ordinated approach to service provision based on mobile periodic services should deliver services to those settlements and areas with high and low levels of need but low economic growth potential.
- Equitably distribute public facilities and services throughout the municipal area;
- Where ever possible buildings and facilities should be multi-purpose and accessible to all government departments, community based

and non-government based organisation and the private sector on a cost recovery basis as appropriate.

- Efforts to address past inequities should focus on people, not places. Therefore, fixed investment to promote economic growth and development (e.g. infrastructure) should be in areas of economic growth and potential only (in order to attract private sector investment, stimulate sustainable economic activities and to create long term employment)
- Social investment to provide the necessary community infrastructure for people to educate, nurture and house themselves should be throughout, although in different forms depending on level of economic potential (Hence, in areas of limited potential, it is recommended that, beyond a level of basic services to which all citizens are entitled, government should concentrate primarily on social investment.)
- If people are living in poverty in areas of high economic activity or high potential then both fixed investment and social spending should occur. If there is low economic activity or low potential then there should only be social spending. Social spending in areas of low economic activity or potential should equip people to participate in the areas of high economic activity as well as provide them with basic needs.

ANNEXURE 2 : SMART GROWTH PRINCIPLES

Growth is an inevitable consequence of a healthy market-based economy. The latest thinking about how to harness the positive aspects of growth while minimizing its negative impacts is called "Smart Growth."

CHAPA has adapted Smart Growth principles from several sources to reflect its commitment to equitable community development and affordable housing. Managed well, growth can be a force for positive change. The principles set forth below are intended to provide guidance for CHAPA member organizations and Massachusetts' communities for rethinking our approaches to growth.

- Promote efficient land use through development of compact communities with a lively mix of uses, including housing, businesses and shops, civic and open spaces, to encourage walking, reduce the need for auto use, support public transit and minimize loss of open space.
- Promote regional land use planning and transportation options and coordinate local development with these plans.
- Encourage tax policy that reduces the dependence on local property taxes and the competition for high-tax value land uses. Encourage plans and policies that allow all communities within a region to share in the benefits and responsibilities of growth.
- Promote diverse housing types in all communities to enable persons and households from a wide range of economic levels, cultures and age groups to live and work within their boundaries.
- Foster a strong sense of place: Consider the history, environment, resources and character of communities when planning new development.
- Promote development that makes use of existing infrastructure by rehabilitating existing structures, cleaning and reusing contaminated sites, and building on infill parcels. Encourage development that conserves resources, minimizes waste, promotes health and enhances the communities in which it is located.

- Consider the impact of development on larger ecosystems, and wherever possible, preserve the natural terrain, wildlife habitat, drainage and vegetation of a community and region, and permanently protect superior examples. Promote special protections for working landscapes - farms, forests and waterfronts.
- Establish development decision-making processes that are open, predictable, fair and cost-effective.

(source: Citizens' Housing and Planning Association)

ANNEXURE 3 : DEVELOPMENT FACILITATION ACT PRINCIPLES

OFFICE OF THE PRESIDENT

No. 1526.
4 October 1995

NO. 67 OF 1995: DEVELOPMENT FACILITATION ACT, 1995.

It is hereby notified that the President has assented to the following Act which is hereby published for general information:-

GENERAL EXPLANATORY NOTE:

** ** Words between asterisks indicate omissions from existing enactments.

<< >> Words between pointed brackets indicate insertions in existing enactments.

ACT

To introduce extraordinary measures to facilitate and speed up the implementation of reconstruction and development programmes and projects in relation to land; and in so doing to lay down general principles governing land development throughout the Republic; to provide for the establishment of a Development and Planning Commission for the purpose of advising the government on policy and laws concerning land development at national and provincial levels; to provide for the establishment in the provinces of development tribunals which have the power to make decisions and resolve conflicts in respect of land development projects; to facilitate the formulation and implementation of land development objectives by reference to which the performance of local government bodies in achieving such objectives may be measured; to provide for nationally uniform procedures for the subdivision and development of land in urban and rural areas so as to promote the speedy provision and development of land for residential, small-scale farming or other needs and uses; to promote security of tenure while ensuring that end-user finance in the form of subsidies and loans becomes available as early as possible during the land development process; and to provide for matters connected therewith.

ARRANGEMENT OF ACT

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(English text signed by the President.)
(Assented to 28 September 1995.)

BE IT ENACTED by the Parliament of the Republic of South Africa as follows:-

(xxv) "registrar" means a registrar as defined in section 102 of the Deeds Registries Act, 1937; (xxiii)

(xxvi) "regulation" means a regulation made under this Act; (xxiv)

(xxvii) "settlement plan" means a plan indicating the relative situation in a land development area of sites, premises, public places and zones used or to be used for small-scale farming, or for small scale farming together with any of the other purposes referred to in the definition of "land development", and approved by a tribunal as part of a land development application in terms of Chapter VI; (xxxiii)

(xxviii) "State" includes a province; (xxvi)

(xxix) "subdivision register" means a register referred to in section 46(1) of the Deeds Registries Act, 1937; (xvi)

(xxx) "surveyor" means a person registered as a professional land surveyor or a professional topographical and engineering surveyor or a topographical and engineering surveyor under the Professional and Technical Surveyors' Act, 1984 (Act No. 40 of 1984), and whose name is entered in the register contemplated in section 7(4) of that Act; (xvii)

(xxxi) "Surveyor-General" means the Surveyor-General as defined in section 49 of the Land Survey Act, 1927; (xi)

(xxxii) "this Act" includes the regulations; (viii)

(xxxiii) "town and regional planner" means a person registered as a town and regional planner in terms of the Town and Regional Planners Act, 1984 (Act No. 19 of 1984), and whose name is entered in the register referred to in section 9(2) of that Act; (xxvii)

(xxxiv) "tribunal" means an administrative development tribunal established for a province by section 15(1); (xxx)

(xxxv) "tribunal registrar" means a tribunal registrar or a deputy tribunal registrar designated by the MEC under section 15(9); (xxxi)

(xxxvi) "zoning scheme" means any townplanning or zoning scheme administered by a local government body or any other competent authority and which relates to the zoning or reservation of land into areas to be used exclusively or mainly for residential, business, industrial, local authority, governmental or other purposes, the prohibition or restriction of the use of land in conflict with the terms of the scheme and matters connected therewith. (xxv)

CHAPTER I

General principles for land development and conflict resolution

Application of principles for land development

2. The general principles set out in section 3 apply throughout the Republic and-

(a) shall also apply to the actions of the State and a local government body;

(b) serve to guide the administration of any physical plan, transport plan, guide plan, structure plan, zoning scheme or any like plan or scheme administered by any competent authority in terms of any law;

(c) serve as guidelines by reference to which any competent authority shall exercise any discretion or take any decision in terms of this Act or any other law dealing with land development, including any such law dealing with the subdivision, use and planning of or in respect of land; and

(d) for the purposes of-

(i) Chapter II, serve as the general framework within which the Commission shall perform its functions and make recommendations and within which those recommendations shall be considered by any competent authority;

(ii) Chapter III, serve as principles by reference to which a tribunal shall reach decisions;

(iii) Chapter IV, provide the guidelines with which the formulation and implementation of land development objectives of local government bodies and the carrying out of land development projects shall be consistent;

(iv) Chapters V and VI, guide the consideration of land development applications and the performance of functions in relation to land development; and

(v) Chapter VII, guide the administration of the registration of land tenure rights.

General principles for land development

3. (1) The following general principles apply, on the basis set out in section 2, to all land development:

(a) Policy, administrative practice and laws should provide for urban and rural land development and should facilitate the development of formal and informal, existing and new settlements.

(b) Policy, administrative practices and laws should discourage the illegal occupation of land, with due recognition of informal land development processes.

(c) Policy, administrative practice and laws should promote efficient and integrated land development in that they-

(i) promote the integration of the social, economic, institutional and physical aspects of land development;

(ii) promote integrated land development in rural and urban areas in support of each other;

(iii) promote the availability of residential and employment opportunities in close proximity to or integrated with each other;

(iv) optimise the use of existing resources including such resources relating to agriculture, land, minerals, bulk infrastructure, roads, transportation and social facilities;

(v) promote a diverse combination of land uses, also at the level of individual erven or subdivisions of land;

(vi) discourage the phenomenon of "urban sprawl" in urban areas and contribute to the development of more compact towns and cities;

(vii) contribute to the correction of the historically distorted spatial patterns of settlement in the Republic and to the optimum use of existing infrastructure in excess of current needs; and

(viii) encourage environmentally sustainable land development practices and processes.

(d) Members of communities affected by land development should actively participate in the process of land development.

(e) The skills and capacities of disadvantaged persons involved in land development should be developed.

Policy, administrative practice and laws should encourage and optimise the contributions of all sectors of the economy (government and non-government) to land development so as to maximise the Republic's capacity to undertake land development and to this end, and without derogating from the generality of this principle-

(i) national, provincial and local governments should strive clearly to define and make known the required functions and responsibilities of all sectors of the economy in relation to land development as well as the desired relationship between such sectors; and

(ii) a competent authority in national, provincial or local government responsible for the administration of any law relating to land development shall provide particulars of the identity of legislation administered by it, the posts and names of persons responsible for the administration of such legislation and the addresses and locality of the offices of such persons to any person who requires such information.

(g) Laws, procedures and administrative practice relating to land development should-

(i) be clear and generally available to those likely to be affected thereby;

(ii) in addition to serving as regulatory measures, also provide guidance and information to those affected thereby;

(iii) be calculated to promote trust and acceptance on the part of those likely to be affected thereby; and

(iv) give further content to the fundamental rights set out in the Constitution.

(h) Policy, administrative practice and laws should promote sustainable land development at the required scale in that they should-

(i) promote land development which is within the fiscal, institutional and administrative means of the Republic;

(ii) promote the establishment of viable communities;

(iii) promote sustained protection of the environment;

(iv) meet the basic needs of all citizens in an affordable way; and

(v) ensure the safe utilisation of land by taking into consideration factors such as geological formations and hazardous undermined areas.

(i) Policy, administrative practice and laws should promote speedy land development.

(j) Each proposed land development area should be judged on its own merits and no particular use of land, such as residential, commercial, conservational, industrial, community facility, mining, agricultural or public use, should in advance or in general be regarded as being less important or desirable than any other use of land.

(k) Land development should result in security of tenure, provide for the widest possible range of tenure alternatives, including individual and communal tenure, and in cases where land development takes the form of upgrading an existing settlement, not deprive beneficial occupiers of homes or land or, where it is necessary for land or homes occupied by them to be utilised for other purposes, their interests in such land or homes should be reasonably accommodated in some other manner.

(l) A competent authority at national, provincial and local government level should co-ordinate the interests of the various sectors involved in or affected by land development so as to minimise conflicting demands on scarce resources.

(m) Policy, administrative practice and laws relating to land development should stimulate the effective functioning of a land development market based on open competition between suppliers of goods and services.

(2) The Minister may by notice in the Gazette-

(a) prescribe any principle for land development in addition to, but not inconsistent with, the principles set out in subsection (1); and

(b) prescribe any principle set out in subsection (1) in greater detail, but not inconsistent therewith, whereupon such principle shall apply throughout the Republic on the basis set out in section 2.

(3) The Premier of a province may by proclamation in the Provincial Gazette-

(a) prescribe any principle for land development in addition to, but not inconsistent with, the principles set out in subsection (1) or prescribed by the Minister under subsection (2);

(b) prescribe any principle set out in subsection (1) or prescribed by the Minister under subsection (2) in greater detail, but not inconsistent therewith; and

(c) publish for general information provincial policy relating to land development or any aspect thereof which is consistent with the principles set out in or prescribed under subsections (1) and (2) and paragraphs (a) and (b), whereupon such principle or policy shall apply in the province on the basis set out in section 2.

(4) (a) The Minister shall, before prescribing any principle under subsection (2), cause a draft of such principle to be published in the Gazette and shall consider any comment on such draft principle received from any person

during the period 30 days after such publication.

(b) A list of principles prescribed under subsection (2) shall be laid upon the Table of Parliament in the same manner as the list referred to in section 17 of the Interpretation Act, 1957 (Act No. 33 of 1957), and if Parliament by resolution disapproves of any such principles or any provision thereof, such principles or provision shall cease to be of force and effect, but without prejudice to the validity of anything done in terms of such principles or such provision before it so ceased to be of force and effect, or to any right or liability acquired or incurred in terms of such principles or such provision before it so ceased to be of force and effect.

(5) (a) The Premier shall, before prescribing any principle or policy under subsection (3), cause a draft of such principle or policy to be published in the Provincial Gazette and shall consider any comment on such draft principle or policy received from any person during the period thirty days after such publication.

(b) A list of principles and policies prescribed under subsection (3) shall be submitted to the provincial legislature, and if such provincial legislature by resolution disapproves of any such principle or policy, or any provision thereof, such principles or policy, or

provision, shall cease to be of force and effect, but without prejudice to the validity of anything done in terms of such principles, policy or such provision before it so ceased to be of force and effect, or to any right or liability acquired or incurred in terms of such principles, policy or such provision before it so ceased to be of force and effect.

General principles for decision-making and conflict resolution

4. (1) The general principles set out in subsection (2) apply-

(a) to any decision which a competent authority, including a tribunal, may make in respect of any application to allow land development, or in respect of land development which affects the rights, obligations or freedoms of any person or body, whether the application is made or the development undertaken in terms of this Act or, subject to paragraph (c), in terms of any other law;

(b) without derogating from the generality of paragraph (a), to any decision-

(i) on the question whether any illegal use of land should henceforth be regarded as lawful;

(ii) approving or disapproving of any proposed change to the use of land in the course of proposed land development;

(iii) relating to the level or standard of engineering services that are to be provided in respect of land development;

(iv) relating to the permitted periods within which comments or objections should be provided and governmental decisions are to be taken during the course of land development procedures; and

(v) relating to the consequences for any land development or for the rights and obligations of any person or body of a failure to provide any comment, make any decision or perform any other act within a period of time contemplated in subparagraph (iv); and

(c) where a decision referred to in paragraphs (a) and (b) is made under any other law, only when such decision is made during the course of

the administration of a law made after the commencement of this Act by the legislature of a province or by a local government body, including such a law which is inconsistent with Chapter 111.

(2) The decisions contemplated in subsection (1) shall be taken in accordance with the following general principles:

- (a) The decisions shall be consistent with the principles or a policy set out in or prescribed under section 3.
- (b) The decisions shall be made by at least one appropriate officer in the service of a provincial administration or local government body, and experts in the field of agriculture, planning, engineering, geology, mining, environmental management, law, survey or such other field as may be determined by the Premier.
- (c) The officer and experts shall, before conducting a hearing or reaching a decision, enquire into and consider the desirability of first referring any dispute between two or more parties in relation to land development to mediation and if they-
 - (i) consider mediation appropriate, they shall refer the dispute to mediation;
 - or
 - (ii) consider mediation inappropriate, or if mediation has failed, the officer and experts shall conduct a hearing appropriate in the circumstances and reach a decision binding upon persons or bodies affected thereby, including the State or any local government body.
- (d) The hearing conducted by the officer and experts is open to the public and any person entitled to appear at the hearing may be represented by any other person.
- (e) The officer and experts shall upon request provide written reasons for any decision reached by them.
- (f) The Director-General of a provincial administration shall keep a record of reasons provided in terms of paragraph (e), make such record available for inspection by members of the public and permit the publication of such reasons by any person or body.
- (g) A decision made by the officer and experts shall be subject to review by any division of the Supreme Court of South Africa having jurisdiction.

CHAPTER II

Development and Planning Commission

Establishment of Development and Planning Commission

5. (1) There is hereby established a juristic person to be known as the Development and Planning Commission.

(2) The Minister may, by notice in the Gazette, disestablish the Commission as soon as its functions in terms of this Act have been concluded.

Functions and powers of Commission and co-ordination of advice

6. (a) The Commission-