

GUIDELINES

FOR DEVELOPMENT WITHIN



KRUGER TO CANYONS
BIOSPHERE REGION

	CORE ZONE	BUFFER ZONE	TRANSITION ZONE
Ideals & Goals	The main goal of the core zone is conservation of biodiversity and the associated natural processes and cycles at landscape, ecosystem, species and genetic levels	The aim of the buffer zone is to support conservation objectives within the core zone as well as the greater region, but must also have economic viability	The aims in the Transition zone are far more complex but include sustainable development practices, poverty alleviation, skills upliftment, sustainable agricultural and mining practices
Purpose	There is a need for limited development in the core, to contribute to economy of the protected area, provided it doesn't become main focus nor compromise ecological integrity of the area. There is also the need for development to help create awareness about the area & its ecological, cultural and historical importance. The purpose of development in the core is to support the Education and Research & monitoring function as well as tourism a limited degree.	There is a need for sustainable development in the buffer to help make conservation areas economically viable. Development in the buffer takes the form of infrastructure that is tourism related as well as research and education based. All development must be strictly environmentally sensitive and should blend in with environmental characteristics and processes with little to no compromise to the ecological integrity.	The Transition Zone is essentially the zone of co-operation, where the bulk of the population lives and where most economic activities take place. There are multiple land use types taking place in this zone. All landuses should be conducted in as sustainable and environmentally friendly manners as is possible. The need for Development in the Transition Zone is to help increase the value of the K2C region.
RESOURCE UTILIZATION			
Water	The K2C Core Zones fall into both ends of the extreme as far as water is concerned. Areas such as the Blyde and the Wolkberg are catchment areas therefore water management aspects are crucial and areas such as the Kruger are "at the end of the line" where the rivers are drying up due to poor management up stream. Any developments within the core zones must fulfill EIA requirements and DWAF regulations. All need to have some means of capturing & storing rainwater. Water efficiency and water reduction methods to be in place (eg grey water systems)	Water is one of the most precious resources in the region, especially in the Lowveld component, due to low rainfall and is considered an arid / semi-arid region. The escarpment has significant importance to protection of the catchment. All developments must fulfill EIA requirements as regards water sourcing (see detailed report). All need to have some means of capturing & storing rainwater. Water efficiency and water reduction methods to be in place (eg grey water systems) All DWAF regulations to be followed.	All Grey water - private and municipal should be treated (list of best practices available from K2C). All major and commercial developments must fulfill EIA requirements as regards water sourcing (see detailed report). Capturing and storing of rainwater is encouraged and implemented if possible. Water efficiency and water reduction methods to be encouraged and implemented where possible (eg grey water systems)

Energy	All developments within the core zone should supplement their energy use through renewable resources eg solar hot water systems, wind powered or solar powered water pumps etc. Any existing developments to investigate above implementation s as well as installations of energy saving devices such as timers and blankets on all geysers.	Current energy from Eskom's is mostly derived from coal, and contributes largely to carbon emissions, This does not have a direct impact on the K2C buffer zone, but does have huge implications for climate change, so it is imperative to move to alternate renewable energy sources. All new developments to at the very least supplement their energy supply with solar or wind power. All existing developments to investigate solar power installations and aim to supplement their energy supply with solar. All developments to be installed with energy saving devices (such as time switches on geysers / any heating devices, geyser blankets etc).	Implement strategies for saving energy e.g. Timers on geysers, geyser blankets etc. Educate energy users on Best Practice strategies Overhead electricity lines are acceptable in the Transition Zone but underground lines recommended in nature-based, tourism and scenic areas. Utilise alternative renewable energy resources wherever possible.
Construction Materials	All developments in the core zone to have minimal impact on the environment. Developments should be planned to show little to no signs of previous existence should they be removed from the area. All material used in the construction of a development is to be environmentally sensitive with local sources being preferable to those outside of the region.	All materials must be sourced locally including investigating by-products from big industries. Recycle / re-use existing waste material such as old building rubble in foundations. Investigate any other potential sources before abstracting from new sites, e.g. dredging weirs for sand. Ensure suppliers are legal and have the required permits Enviro Assessment Practitioners to address the impact if a new site is to be utilised. Should a new site be used: Irrespective of the material / site / quantities the site must be rehabilitated after the material has been collected (part of the EMP).	Avoid hardwood timber as a construction material where possible as it is not sustainable. Ensure that the supplier of construction material has the appropriate license (e.g. a permit for mining river sand etc). Use locally sourced material, products and services

Indigenous Fauna and Flora	This may be in the form of thatch collection, marula harvesting, medicinal herbs and / or hunting / culling operations etc. This kind of utilisation must be guided by what has been written into the Protected Area Management Plan and legislation where applicable (Provincial & National Government Level).	As for the Core Zone: This kind of utilisation must be guided by what has been written into the Protected Area Management Plan and legislation where applicable (Provincial & National Government Level).	Bulk harvesting of plant resources (for any purpose e.g. medicinal, crafts etc) needs to be investigated, controlled and managed to ensure sustainability.. Banned alien species to be removed from region, Waterwise gardens to be encouraged and promoted
POLLUTION CONTROL AND REDUCTION			
Solid Waste Management	The ideal is to re-use & reduce recycle and this should be implemented as much as possible considering currently limitations on recycling facilities within the K2C Region. All households should separate food wastes to packaging material and make their own compost.	The ideal is to re-use & reduce recycle and this should be implemented as much as possible considering currently limitations on recycling facilities within the K2C Region. All households should separate food wastes to packaging material and make their own compost.	The ideal is to re-use & reduce recycle and this should be implemented as much as possible considering currently limitations on recycling facilities within the K2C Region. All households should separate food wastes to packaging material and make their own compost.
Sewerage Management	Adhere to DWAF regulations and guidelines. Identify the most suitable environmentally friendly system (e.g. wetland / reed bed system) for the particular site guided by the appropriate technical surveys i.e. Soil assessment, geo-technical surveys etc	Adhere to DWAF regulations and guidelines. Identify the most suitable environmentally friendly system (e.g. wetland / reed bed system) for the particular site guided by the appropriate technical surveys i.e. Soil assessment, geo-technical surveys etc	Adhere to DWAF regulations and guidelines. Identify the most suitable environmentally friendly system (e.g. wetland / reed bed system) for the particular site guided by the appropriate technical surveys i.e. Soil assessment, geo-technical surveys etc
Air Pollution	Any developments in the core zone should not require large scale clearing and thus burning of the cleared material. Fire management plans should be in place to control intentional and wild fires and successfully keep them away from any developments, constructions or buildings.	Operate within the legal framework. Avoid burning when clearing land, rather let the wood and other vegetation be harvested by other interested users eg neighbouring communities. Avoid burning of rubbish particularly plastics and rubbers unless through properly designed incinerators.	Operate within the legal framework. Avoid burning when clearing land, rather let the wood and other vegetation be harvested by other interested users eg neighbouring communities. Comply to ISO standards for mining and industries. Avoid burning of rubbish particularly plastics and rubbers.

Noise Pollution	With minimized and controlled development noise pollution should be minimal within the core areas. Any developments within core zones should have little to no noise impact on the surrounding region and should compliment its surroundings.	Vehicles travelling on main roads that pass through the buffer zone generate excessive noise- reducing speed limits will reduce noise levels. Generators used need to be either silenced (safely) or they need to be of a type that is quieter (e.g. electrical vs diesel engines) For noisy equipment a time regulation should be implemented.	Show consideration for neighbours. Noisy recreational vehicles such as boats and quad bikes only to be used on areas that will not disturb others
Light Pollution	Lighting must be kept low. Lighting should preferably be sensor driven Lighting must not be seen by neighbours / others. Low wattage globes to be used where possible to avoid greater spread of light	Lighting must be kept low. Lighting should preferably be sensor driven Lighting must not be seen by neighbours / others. Low wattage globes to be used where possible to avoid greater spread of light	Keep directional lighting low. Consider the direction in which they point to avoid disturbance of neighbours. Consider the duration for which they are on Consider the location of the development site eg developments on the mountain are visual from the lowveld region
MITIGATION OF NEGATIVE ENVIRONMENTAL IMPACTS			
Construction	Any new construction within a core zone should have little to no long term impact on the surrounding environment. Construction should be planned to be able to leave no visible trace should the development be removed or broken down. Existing developments should be re-designed to include Sustainable Design concepts to reduce energy requirements. Site surveys must be conducted and sensitive sites avoided Removal of large & established trees & plants prohibited.	Adhere to all EIA regulations, specifically for large developments. Site surveys must be conducted and sensitive sites must be avoided. Removal of large and established trees and plants prohibited - build around them. Construction along riparian zones to be avoided.	Adhere to all EIA regulations, specifically for large developments. Site surveys must be conducted and sensitive sites should be avoided. Removal of large and established trees and plants must be avoided - build around them. Construction along riparian zones to be avoided.

Design	Buildings in the core zone are to blend into the surrounding environment and should be limited to a single story / not protruding above the tree-line. Use natural materials but with limitations so as to not negatively impact on resources. Simulated natural materials could also be used. Developments to incorporate Sustainable Design principles thereby designed to be energy and water efficient minimizing the requirements and use of both resources.	Buildings in the buffer zone limited to a single story / not protruding above the tree-line. Signage needs to meet legislative regulations and should be themed. Buildings to blend in with the environment using appropriate colours. Use natural materials but with limitations so as to not negatively impact on resources. Simulated natural materials could also be used. Gatehouses to be maintained. Developments to be designed to be energy and water efficient minimising the requirements and use of both resources.	Design infrastructure to blend in with environment / landscape. Reduce the size of the ecological/ carbon footprint to minimum. Incorporate green principles as much as possible.
Activities	As developments within the Core Zone should be limited, so should the activities. Any activities employed within this zone should be crucial to research, education and unique, low-impact tourism services. All core areas to have short and long term Management Plans that include management of activities within boundaries and deal with aspects such as Fire Management, Pest management and activity impact management etc.	No new development in the 1 in 100-year flood line of perennial & non-perennial drainage lines. If existing infrastructure (in the 100 year flood line) is washed away it may not be replaced / rebuilt there again. Prescribe to principles of responsible tourism. Hunting: adhere to legislation and objectives of the Protected Area Management Plan. Only acceptable pesticides and herbicides to be used (full list available in detailed document) Fire: ecological burning practices should be provided for in the PA Management Plan. Adhere to legislation. A need for regulations & procedures with regards to controlling accident fires.	No new development in the 1 in 100-year flood line of perennial & non-perennial drainage lines. If existing infrastructure (in the 100 year flood line) is washed away it may not be replaced / rebuilt there again. Only acceptable pesticides and herbicides to be used (full list available in detailed document) Take neighbours into consideration

Landscaping	Only indigenous (to the specific conservation area) flora to be used. Gardens of officials, and other infrastructure in the area to be water wise. Have a management plan in place for eradication / control of alien invasive plants. Have a management plan in place for eradication / control of bush encroaching species.	Only indigenous (to the region) flora to be used. Gardens to be water wise. Avoid damaging of sensitive habitats e.g. riparian zones (should be addressed in the EIA). Have a management plan in place for eradication / control of alien invasive plants. Have a management plan in place for eradication / control of bush encroaching species. Use landscaping as a tool to address some disturbances such as soil erosion	Water wise & efficient irrigation systems. Preferable use of indigenous and endemic plants. No removal of large trees and plants. Employ a green / organic policy. Use environmentally friendly pesticides and insecticides, thereby eliminating chemicals and poisons in the garden. Use natural compost rather than chemical fertilizers.
Ecosystem Disturbance	Developments within the core zone should have no ecosystem disturbance at all. Alternatively, where absolutely necessary, it should be minimized and have a strong and ethical rehabilitation programme following any resultant disturbance. EIA's are imperative and subsequent ROD requirements to be implemented	The main concern is habitat loss from mass clearings therefore all developments, regardless of their size must adhere to EIA regulations (more information on this is available in the detailed document). They must avoid mass clearings and disturbance to the landscape and vista & rather only clear the exact site where the buildings will be located. Additionally, they must ensure natural corridors remain intact where necessary	Developments are encouraged to have as little disturbance as possible and they should coincide with site surveys. Site surveys will assist in identifying large trees, plants and geological formations on properties that should be retained and buildings built in between or around such features.
MITIGATION OF NEGATIVE SOCIAL IMPACTS			
Job Creation	Create sustainable jobs for local residents. Use local skills and abilities as far as possible. Only sourcing from out of the area when skills are not available locally. Implements skills development for all levels of staff. Job creation is meaningful with potential of self empowerment, improvement and skills training	Create sustainable jobs for local residents. Use local skills and abilities as far as possible. Only sourcing from out of the area when skills are not available locally. Implements skills development for all levels of staff. Job creation is meaningful with potential of self empowerment, improvement and skills training	Create sustainable jobs for local residents. Use local skills and abilities as far as possible. Only sourcing from out of the area when skills are not available locally. Implements skills development for all levels of staff. Job creation is meaningful with potential of self empowerment, improvement and skills training

Management of Staff	Make sure legislation as outlined by Dept of Labour Affairs is adhered to and implemented. Employ fair labour practices applicable to land use, eg labour guidelines according to Fair Trade and Tourism principles. Encourage and educate staff on conservation and hospitality principles and ethics regardless of land-use or business practice.	Make sure legislation as outlined by Dept of Labour Affairs is adhered to and implemented. Employ fair labour practices applicable to land use, eg labour guidelines according to Fair Trade and Tourism principles. Encourage and educate staff on conservation and hospitality principles and ethics regardless of land-use or business practice.	Make sure legislation as outlined by Dept of Labour Affairs is adhered to and implemented. Employ fair labour practices applicable to land use, eg labour guidelines according to Fair Trade and Tourism principles. Encourage and educate staff on conservation and hospitality principles and ethics regardless of land-use or business practice.
Management of Contractors	Preferably use K2C endorsed professionals e.g. builders, architects etc. Endorsement will be based on historical track record, conservation ethics & principles, and knowledge on green building. If non-approved contractors being used, check & confirm all qualifications to ensure authenticity of skills Contractors' actions must be permanently monitored - fines implemented for irregular practices in certain reserves/ areas. Ensure that contractors follow through with all EIA findings, recommendations and requirements as outlined in final ROD's	Preferably use K2C endorsed professionals e.g. builders, architects etc. Endorsement will be based on historical track record, conservation ethics & principles, and knowledge on green building. If non-approved contractors being used, check & confirm all qualifications to ensure authenticity of skills Contractors' actions must be permanently monitored - fines implemented for irregular practices in certain reserves/ areas. Ensure that contractors follow through with all EIA findings, recommendations and requirements as outlined in final ROD's	Contractors must be permanently monitored to ensure minimal impact is made on the environment. Preferably use K2C endorsed professionals e.g. builders, architects etc. Endorsement will be based on historical track record, conservation ethics & principles, and knowledge on green building. If non-approved contractors being used, check & confirm all qualifications to ensure authenticity of skills. Ensure that contractors follow through with all EIA findings, recommendations and requirements as outlined in final ROD's
Assistance of, and involvement with neighbouring communities	Developments to establish partnerships with community projects that have economic value and are sustainable. Use local skills and labour first. Assist with skills development and upliftment where possible thereby creating skills where there was a previous lack thereof. Help build capacity in the region. Create and sustain value-added outreach programmes.	Developments to establish partnerships with community projects that have economic value and are sustainable. Use local skills and labour first. Assist with skills development and upliftment where possible thereby creating skills where there was a previous lack thereof. Help build capacity in the region. Create and sustain value-added outreach programmes.	Provide value-added outreach programmes. Employ locally based skills and labour.

Archaeological, cultural and historical values	Adhere to national legislation (eg SARA) in each regard. Create awareness and education about the value the site/s.	Adhere to national legislation (eg SARA) in each regard. Create awareness and education about the value the site/s.	Adhere to national legislation (eg SARA) in each regard. Create awareness and education about the value the site/s.
REGIONAL FACTORS			
Regional Impact	As the main purpose of the core zone is conservation based and to act as a bench mark to which the impacts of development in the other zones can continually be monitored, any developments in this region need careful consideration as to the impact it will have to the greater region, as well as to the high conservation status, ethics and principles employed within a core zone.	The regional impact of the buffer zone is extensive in this area because of the vast areas of land under private conservation, thus less land is transformed from its natural state and therefore less pollution, habitat loss and other similar negative impact that are associated with development. The buffer is generally supportive of core area objectives. These areas are carbon sinks, an ever-important value especially in light of the global warming issue the planet's population is trying to cope with. Any development within the buffer zone needs careful consideration as to the effects it will have on the greater region as well as potentially to the core zone.	Activities associated with transition zone can & will have negative impactS on the region (social, economic & ecological) when they encroach on core & buffer zones. This could be in many forms such mining in a protected area, a pipeline through a conservation area or a dam in a river system. These kind of impacts can be avoided or reduced with careful planning and awareness by all parties involved. Sustainable solutions may be more costly economically, but the long-term implications and social & ecological impacts need to be taken into consideration and encouraged.
Sustainability of contributing towards Regional GDP	The core zone contributes to the GDP through education, research & tourism. It must also enter into processes whereby neighbouring communities are able to have controlled & managed access to natural resources within these zones falling within the regions goals & management programmes. Any tourism projects must register and apply Fair Trade & Tourism Principles	The buffer zone contributes to the GDP mainly through tourism, but also hunting & sale of live game and game meat. Needs to ensure & promote sustainability include a more truthful and more effective marketing strategies specifically relating to eco-tourism vs nature-based tourism as well as increasing awareness on responsible tourism principles especially amongst tourism operators within region	There is currently a big building & development boom within the region, which contributes significantly to the current GDP specifically in terms of employment, however this will reach a peak & potentially slow down over time, thus the sustainability thereof is questionable. To ensure sustainability it requires succession planning as well as the development of alternative industries.

LEGISLATION

The K2C itself, will not create nor implement any new laws or legislations itself, however, it will work with and encourage implementation of current legislation established at a local, provincial and national level. The following list are the main laws and acts that are applicable in the management of each zone.

Policies, Strategies, Acts, Laws and By-Laws	<ul style="list-style-type: none"> ▣ Agenda 21 ▣ Biodiversity Convention ▣ Limpopo Conservation Act ▣ Mpumalanga Conservation Act (Act no. 10 of 1998), ▣ National (South Africa) Forests Act, 1988 (Act no. 84 of 1988) ▣ National (South Africa) Water Act (436 of 1998) ▣ National Environmental Management Act (Act 107 of 1998) [NEMA] ▣ Pollution legislation in South Africa ▣ Protected Area Management Act (Act 57 of 2003) ▣ Responsible Tourism policies ▣ Seville Strategy ▣ South African National Heritage Act 	<ul style="list-style-type: none"> ▣ Agenda 21 ▣ Biodiversity Convention ▣ Mpumalanga Conservation Act (Act no. 10 of 1998), ▣ Limpopo Conservation Act ▣ Protected Area Management Act (Act 57 of 2003) ▣ National Environmental Management Act (NEMA Act 107 of 1998) ▣ Seville Strategy ▣ National (South Africa) Forests Act, 1988 (Act no. 84 of 1988) ▣ National (South Africa) Water Act (436 of 1998) ▣ Pollution legislation in South Africa ▣ Responsible Tourism policies 	<ul style="list-style-type: none"> ▣ Town Planning Regulations for both Limpopo and Mpumalanga Provinces ▣ Municipal By-Laws ▣ Integrated Development Plans ▣ Agenda 21 ▣ Biodiversity Convention ▣ Mpumalanga Conservation Act (Act no. 10 of 1998), ▣ Limpopo Conservation Act ▣ National Environmental Management Act (NEMA Act 107 of 1998) ▣ Seville Strategy ▣ National (South Africa) Forests Act, 1988 (Act no. 84 of 1988) ▣ National (South Africa) Water Act (436 of 1998) ▣ Pollution legislation in South Africa ▣ Responsible Tourism policies ▣ National Heritage Act
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LAND CLAIMS AND RESTITUTION

- ▣ Land claims need to be properly ratified and speedily executed for the social and economic benefit of the entire region
- ▣ Prime benefit of the land, both economically, environmentally and socially is to be determined and promoted as the main land use to be instituted .
- ▣ Future land use needs to align to Biosphere zonation as well as principles and ethics.
- ▣ Partnerships between previous landowners and restituted landowners to be encouraged to ensure successful continuation of prime land use benefits.