MOQHAKA SDF

SPATIAL DEVELOPMENT FRAMEWORK

2019/2020

REVIEWED SPATIAL DEVELOPMENT FRAMEWORK FOR THE MOQHAKA LOCAL MUNICIPALITY
IN TERMS OF SECTION 34 OF THE MUNICIPAL SYSTEMS ACT, 2000 (ACT 32 OF 2000),
SECTION 20(3)(A) OF THE SPATIAL PLANNING AND LAND USE MANAGEMENT ACT, ACT 16 OF 2013 AND
SECTION 4(2) OF THE MOQHAKA LOCAL MUNICIPALITY LAND USE PLANNING BY-LAWS, NOVEMBER 2015

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Prepared by the IDP Steering Committee of the Moqhaka Local Municipality
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GLOSSARY

CARA Conservation of Agricultural Resources Act
CBD Central Business District
CSIR Council for Scientific and Industrial Research
DAFF Department of Agriculture, Forestry and Fisheries
FSPGDS Free State Provincial Growth and Development Strategy
FS COGTA : Free State Department of Cooperative Governance and Traditional Affairs
DFA Development Facilitation Act
DMR Department of Minerals Resources
du/Ha dwelling units per hectare
EMF Environmental Management Framework
EMZ Environmental Management Zones contained in the VDWHS EMF
GDP Gross Domestic Product
GLA Gross Leasable Area
GRP Gross Regional Product, i.e. for District or Local Municipality
GVA Gross Value Added
HDA Housing Development Agency
I&AP Interested and Affected Parties
IDP Integrated Development Plan
ITP Integrated Transport Plan
LDO Land Development Objective
LDT Long Distance Taxi
LFPR Labour Force Participation Rate
LGTA Local Government Transition Act
LUS Land Use Scheme
MTSF Mid Term Strategic Framework
NGO Non-Governmental Organisation
NDP National Development Plan
NSDP National Spatial Development Perspective
PGDS Provincial Growth and Development Strategy
PSDF Provincial Spatial Development Framework
RDP Reconstruction and Development Program
STATS SA Statistics South Africa
SDF Spatial Development Framework
SDT Short Distance Taxi
SEA Strategic Environmental Assessment
SPCA Society for the Prevention of Cruelty to Animals
SPC Spatial Planning Category
SPLUMA Spatial Planning and Land Use Management Act
Structure Plan refers to Vaal River Complex Regional Structure Plan, 1996 (former Vaal River Complex Guide Plan, 1982)
TLC Transitional Local Council
TRC Transitional Rural Council
VDWHS Vredefort Dome World Heritage Site
VDWHS EMF Vredefort Dome World Heritage Site Environmental Management Framework (Including EMFs for the Ngwathe and Moqhaka Municipalities)
STDI Small Towns Development Initiative
TPS Town Planning Scheme
WPW Water Purification Works
WWTW Waste Water Treatment Works

APPROVAL

The Moqhaka Spatial Development Framework was duly adopted and approved by the Council of the Moqhaka Local Municipality on 30 October 2019 (item 193).

ALIGNED PROJECTS

The National Development Plan (NDP), Mid Term Strategic Framework of the NDP (MTSF), Free State Provincial SDF (PSDF), Free State Provincial Growth and Development Strategy (FSPGDS) and Municipal IDP were assessed and all spatial related component thereof listed (refer to Annexure 2). Each specific driver and/ or development objective were assigned a number. In order to indicate how alignment was achieved, the relevant number of a policy is indicated next to an identified project, verifying that alignment of the identified spatial projects, indeed occurred.

Spatial Projects relating to Urban Areas and the Moqhaka Rural Areas:

Moqhaka Rural SDF	**NDP**	**MTSF**	**PSDF**	**FSGDS**	**IDP/ SDF**	**On Map**
A : CORE						
▪ Vredefort: Conservation of the plant biome in the Vredefort Dome	3		4	2		
▪ Viljoenskroon: Conservation of the Olifantsvlei and associated "pan-veld." **[Current sewerage spillages into the system must be ceased as a matter of immense].**	3			2, 28	2	
B : BUFFER						
Kroonstad Region						
▪ The Vals River, its tributaries, constructed dams and associated riparian areas must be protected.	5, 21		4, 5	2, 28	2	
▪ Proper management of the Vals River riparian must be implemented to intercept misuse and pollution of the area.	5, 21		4, 5	2, 28	2	S 7, 9, 11, 14, 15, 16
Viljoenskroon Region						
▪ The Renoster and Vaal River, its tributaries, constructed dams and associated riparian areas must be protected.	5, 21		4, 5	2, 28	2	

Moqhaka Rural SDF	NDP	MTSF	PSDF	FSGDS	IDP/ SDF	On Map
Steynsrus Region						
▪ The Vals River and Jas se Spruit, its tributaries, constructed dams and associated riparian areas thereto, must be protected.	5, 21		4, 5	2, 28	2	
▪ Riparian areas adjacent to "Jas se Spruit" must be incorporated in an open space system, not considered for further development.	3		4, 6	2, 27, 28	2	S4
C : AGRICULTURAL AREAS						
Promotion of future agricultural growth must be endeavoured by value-added supplementary agricultural practices including: ▪ Soya Beans (dairy replacement production / products), ▪ Sunflower (biofuel, oil and secondary products i.e. margarine, mayonnaise etc. such as the currents refinery at Villiers), ▪ Cattle Farming (primary production in the north-eastern Free State, feedlots and diversify products), ▪ Game Farming (venison and biltong products, secondary tourism), ▪ Limited opportunities for poultry abattoirs(area currently comprises several abattoirs and market deemed saturated), ▪ Niche Sector: honey production. ▪ Obtaining land for commonage purposes remains a priority in the region. ▪ Table 7b of the SDF earmarks several land parcels and smaller farms to be acquired by the municipality for urban extensions. Timely negotiations with owners and the obtainment of external funding must commence as a priority project in ensuring uninterrupted urban development; especially in those areas where a housing need has been identified and the absence of land, indicated. **[Please refer to Table 7B for details].**	1, 2, 20	1, 3	7, 8	1, 2		

Moqhaka Rural SDF	NDP	MTSF	PSDF	FSGDS	IDP/ SDF	On Map
Rural Health Services						
▪ Mobile Clinics: The service must be enhanced in the entire region in view of shortcomings in rural health services.	14, 17	16				

Moqhaka Raw Water Supply and Water Purification
Kroonstad
▪ Raw water supply: water is pumped from the Vals River to Bloemhoek Dam, requires upgrading (will not be able to provide future demand). ▪ A suitable site for an "out-of-river" storage dam must be considered as an alternative raw water source. ▪ Additional reservoir capacity required. ▪ New bulk water supply pipelines and pump stations will be required for future urban extensions.
Viljoenskroon
▪ Raw water supply: Renoster River, supplemented by Vaal River must be upgraded. ▪ Additional reservoir capacity is required; especially in view of vast residential extensions in Rammulotsi, of late. ▪ New bulk water supply pipelines and pump stations will be required for future urban extensions.
Steynsrus
▪ Raw water supply: Vals River piped to storage dam, although purification capacity is not adequate, additional reservoir capacity is required. ▪ New bulk water supply pipelines and pump stations will be required for future urban extensions.
Moqhaka Waste Water Treatment Works
Kroonstad
▪ Several WWTW pump stations require upgrading. ▪ WWTW network requires upgrading. ▪ WWTW capacity will have to be increased to allow for new extensions.
Viljoenskroon
▪ WWTW capacity will have to be increased to allow for new extensions.

Moqhaka Raw Water Supply and Water Purification
Steynsrus
▪ WWTW capacity will have to be increased to allow for new extensions. ▪ Pump stations and pipelines will be required to allow for new extensions.
Moqhaka Electricity
Kroonstad
▪ Although bulk (via Eskom) is available, remote and new developments may require bulk transfer lines.
Viljoenskroon
Eskom provides bulk and distribution in Rammulotsi (excluding Ext 5) directly ▪ Notified maximum demand from Eskom is 5 MVA (Viljoenskroon only), current load is 5,5 MVA (winter), ▪ Bulk is not available for new developments.
Steynsrus
Eskom provides bulk and distribution in Rammulotsi (excluding Ext 5) directly ▪ Notified maximum demand from Eskom is 1 MVA (Steynsrus only), ▪ Bulk is available for future developments.
Moqhaka Green Services
▪ The provision of green services, in general is underside in Moqhaka. ▪ Investigation into the possibilities (on all levels) must be launched by the municipality and consideration given to rebates where developers and property owners are endeavouring upon green service provision. ▪ Unaccounted usage and waste of purified water must be investigated urgently and measures to intercept water loss, implemented. ▪ Optimal utilisation of stormwater, other than draining into river systems, must be investigated (retention ponds, bio swales, urban greening, etc.).

Region	**Moqhaka Road Requirements**
Regional Road Network and Future Access Requirements - Cross Cutting Issues: ▪ Gravel roads, linking urban areas, ensuring administrative linking, is in a dilapidated and unsafe condition, contributing to the difficulties of integrating the Municipality.	

Region	Moqhaka Road Requirements
Kroonstad	▪ **M6:** A future primary collector road will result in a direct link between the Welkom Road (M5) and the Viljoenskroon Road (M2) and in so doing, also increasing accessibility to the industrial zones in the Urban area, Maokeng and Brentpark. ▪ The nature of road should, however, not be on the scale of a bypass route but rather a main collector route. ▪ **M7:** The future northern bypass will provide a direct link between the N1 National Road (M1), the Parys Road (M3) and the Viljoenskroon Road (M2). ▪ **L1:** An additional link road to the Central Business District (CBD) is proposed across the Vals River in the long-term. ▪ **L2:** A link road is proposed as an extension of Brits Street to link with the Smaldeel Road. ▪ **L3:** A direct link road is proposed between Maokeng and the Industria industrial area. ▪ **L4:** The re-alignment of the eastern portion of the Smaldeel Road past Marabastad is a priority as it will provide an additional link between Maokeng, the industrial area and the CBD via Piet de Vries Avenue. Since the road carries substantial pedestrian and cycle traffic volumes, specific provisions should be made for safe movement once upgrading thereof be considered. ▪ The latter is pertinent due to the fact that the Noordweg subway is functioning on capacity, while no future upgrading possibilities thereof exist. The Piet de Vries Avenue subway is a double lane subway that can easily accommodate additional traffic. ▪ The road reserve of the proposed re-alignment of the Smaldeel Road past Marabastad (L4), has already been formalised during the township re-establishment and formulation of Marabastad. ▪ The construction of this road is deemed a priority, as it will significantly increase accessibility to the CBD and industrial areas from Maokeng. ▪ **M4:** The major provincial road between Kroonstad and Bethlehem (especially between Kroonstad and Steynsrus), of late, became exceedingly decrepit and resurfacing thereof is deemed an extreme priority.
Viljoenskroon	▪ **M1**: The provincial road P15/1 and P15/2 from Kroonstad to Klerksdorp extends through the study area from north to south. ▪ The road between Viljoenskroon is in a derelict condition and repair thereof identified as an extremely urgent priority. ▪ **M2:** Road P33/2 between Viljoenskroon and Bothaville and Road P33/3 between Viljoenskroon and Potchefstroom stretches delineates the northern extremes of the Urban Fringe. ▪ Upgrading and repair of the road network is deemed exceedingly urgent and the conditions of certain sections (especially between Viljoenskroon and Kroonstad), are becoming unsafe and unusable.

Region	Moqhaka Road Requirements
	▪ Due to the significance of the P15/2 (between Kroonstad/ Viljoenskroon and Orkney Road) and P33/2 (Potchefstroom/ Bothaville Road) provincial roads in a national context, the applicable building restriction area adjacent thereto, should be maintained in the future.
Steynsrus	▪ Apart from the provincial primary road network between Kroonstad and Bethlehem (M1) and Steynsrus and Senekal (M2) and the secondary provincial road network to Edenville (M3) and Ventersburg (M4), no other significant roads are provided.

Region	Moqhaka Access Requirements
Kroonstad	▪ **A7**: With the completion of the Maokeng inner-ring road, an additional access to Maokeng must be provided Viljoenskroon Road (M2). ▪ **I5:** Long term development north of Kroonstad (industrial development) will necessitate access to the N1, reconfiguration at the existing shell garage intersection and access to the Parys/ Kroonstad Road.
Viljoenskroon	▪ **A7 & A12:** Additional access from road S1239 must be provided ensuring access to the newly planned Northleigh precincts. ▪ **A8 & A9:** The realignment of Road S1239 will necessitate additional access unto the Potchefstroom Road (P33/3) and the Vredefort Road (S83), respectively. ▪ A10: Obtainment of Subdivisions 1 and 2 of the Farm Vlakvlei 417 is necessary to ensure long term access to the Northleigh precincts.
Steynsrus	▪ **A5:** A cross intersection must be established at this intersection, once the northern hinterland (R2) of Matlwangtlwang is developed. ▪ **A7:** A similar access to the above, will have to be provided should a further residential extension be established at R4. ▪ **A8:** Development of the northern hinterland, adjacent to the Edenville Road (M3) will necessitate a new access to the provincial road.

KROONSTAD/ MAOKENG/ BRENTPARK	NDP	MTSF	PSDF	FSGDS	IDP/ SDF	On Map
D : URBAN RELATED						
Residential						
▪ Erven 14242 & 10790, initially intended for a power line servitude, must be developed (infill planning).	16, 18	14, 17	9, 13	22, 25	9, 11	R3

KROONSTAD/ MAOKENG/ BRENTPARK	NDP	MTSF	PSDF	FSGDS	IDP/ SDF	On Map
▪ The small farm, Morgenzon 2337, initially required by the Roads Directorate, has, on their request, been transferred to the Municipality and must be considered for infill planning (infill planning).	16, 18	14, 17	9, 13	22, 25	9, 11	R4 & ☒
▪ Formalisation of the Naledi Trust area, occurred on the Farm Steenwerp 2150 must be concluded.	18	14, 17	9	22 ,25	9, 11	R5
▪ Marabastad: Administrative challenges must be addressed relating to illegal fencing, numbering, metering et cetera.	17	15	9			
Central Business District						
The former Kroonstad High School sport ground (erf 5873) is neither maintained nor utilised since. Although State owned, the premises must be obtained and offered for appropriate redevelopment.	13, 15, 17		2, 9	23		Δ9
Community Nodes						
▪ The Municipality must consider the preparation of an Integrated Transport Plan (ITP), prepared in consultation with role-players, to holistically address, amongst other, commuter needs in the urban area.		10, 11	18	12	12	
▪ Upgrading of the taxi terminus in Kroonstad (Selborne Square) has been identified as an urgent priority for several years – an alternative and suitably located node could be explored.		11		13		T1
▪ A well located and substantial taxi terminus (or sub terminus) premises opposite the Boitumelo Regional Hospital (erf 30804) must be developed.		11		13		T2
▪ Upgrading and/ or more suitable arrangements must be made to better accommodate the current informal node at the Checkers Centre.		10	18			T3
▪ Illegal embarking and disembarking at the Sarel Cilliers bridge (opposite Shell garage) and at the Panorama Plaza, must be addressed as a priority.				13		

KROONSTAD/ MAOKENG/ BRENTPARK	NDP	MTSF	PSDF	FSGDS	IDP/ SDF	On Map
Urban Open Spaces						
▪ The identification of desirable parks in Maokeng is necessary and must be developed for sport and recreational purposes (informal soccer parks).	14	18	9	23, 24		
▪ A centrally accessible sport terrain in Maokeng must continually be developed.	14	18	9	23, 24		S1
▪ The Loubser Park stadium must be upgraded as a regional athletics stadium.	17			24		S3
▪ The Nyakallong Resort must be upgraded.	17			24		S4
▪ The Brentpark sports ground, although initially well-developed, must be upgraded to prevent further deterioration thereof.	17			24		S5
▪ Redevelopment of the "Noord Oewer" park must be considered as a priority.	17			24		S11
▪ Proper management of the riparian must be implemented to intercept misuse and pollution of the area, being a principal source of raw water to the urban area.	5, 21		20	28		
▪ A prominent vlei area, stretching between the Seeisoville and Marabastad precincts, was partially rehabilitated. Although partial rehabilitation efforts occurred, completion thereof is essential; especially considering flooding and the safety of pedestrians in the area.	21			29		S12
▪ A mixed use and residential development failed. Redevelopment thereof as a water bird sanctuary must be considered.	21	18	25	15		S14
▪ Proper management of the Bloemhoek Dam riparian must be implemented to intercept misuse and pollution of the area, being a principal source of raw water to the urban area.	5, 21			28		S16
Cemeteries						
▪ Continuous maintenance and protection against vandalism of the Heroes Acre (**C4**) and Concentration Camp Cemetery (**C5**), being heritage resources of significance, is a key priority.			28			C4 & 5
▪ Continuous extension of the Maokeng cemetery.		21	9			C2
▪ Continuous maintenance and protection against vandalism of all unused cemeteries must be considered as a key priority.			28			
▪ The provision of ablution facilities and fencing of cemeteries are urgently required.			28			

KROONSTAD/ MAOKENG/ BRENTPARK	NDP	MTSF	PSDF	FSGDS	IDP/ SDF	On Map
Other Social Amenities						
A policy/ bylaw must urgently be prepared to guide and assist faith based organisations in terms of requirements that need to be adhered to when applying for, and once a site has been obtained in intercepting the unceasingly and incremental use of public open space and other social amenity premises.		18	4, 9, 27	24, 27		
E : INDUSTRIAL AREAS						
Industries						
The possibilities must be exploited to establish an "Industrial Park" adjacent the N1, north of the existing urban area, if comprehensive investigations in this regard, proof it to be viable.						I5
Extractive Industries (Mining)						
Various illegal activities adjacent to the Vals River must be seized as a matter of urgency; especially in view of the detrimental effect of unorganised and uncontrolled activities on the environment.			16			G8
F : SURFACE INFRASTRUCTURE & BUILDINGS						
Air Fields						
The Kroonstad airfield must continuously be upgraded and extended to further support the agricultural orientated industries in Kroonstad.	2	4		10		
Landfill Sites						
The current regional landfill site has reached capacity and investigations must commence in identifying a site, not located within/ close to residential precincts, meeting all legal requirements and with capacity to serve the greater urban area in the longer term.		21			8	D

Maokeng: Infrastructure Services:
Water Provision
▪ Extension 10: Established, not occupied, no services

▪ Extension 12: Established, not occupied, no services ▪ Extension 13: Established, not occupied, no services
Sewer Provision
▪ Extension 10: Established, not occupied, no services ▪ Extension 12: Established, not occupied, no services ▪ Extension 13: Established, not occupied, no services
Electricity Provision
▪ Extension 9: Established, partially occupied, partially serviced. ▪ Extension 10: Established, not occupied, no services ▪ Extension 11: Established, partially occupied, partially serviced ▪ Extension 12: Established, not occupied, no services ▪ Extension 13: Established, not occupied, no services
Kroonstad: Infrastructure Services:
Water Provision
▪ Tuinhof (Ext 71 & Ext 75): Established, not occupied, no services ▪ Elandia (Ext 64, 65 & 66): Established, not occupied, no services
Sewer Provision
▪ Tuinhof (Ext 71 & Ext 75): Established, not occupied, no services ▪ Elandia (Ext 64, 65 & 66): Established, not occupied, no services
Electricity Provision
▪ Provided with electricity network ▪ Tuinhof (Ext 71 & Ext 75): Established, not occupied, no services ▪ Elandia (Ext 64, 65 & 66): Established, not occupied, no services

VILJOENSKROON/ RAMMULOTSI	NDP	MTSF	PSDF	FSGDS	IDP/ SDF	On Map
D : URBAN RELATED						
Residential						
▪ Planning of 1 500 new residential erven in Rammulotsi is a priority project.	16, 18	14, 17, 18	9	22	9	
▪ Purchasing of the Farm Biesievlei 497 is evident to ensure the purposeful completion of the new residential extensions (4 001 erven) of Rammulotsi.	10	14, 17, 18	9	22, 23	9, 11	R1
▪ Infill Planning surrounding the decommissioned Landfill Site (Northleigh Phase 1 & 2) must be concluded.	18	17, 18		22, 23	9	R6
Central Business District						
Realignment of Road S1239 will ensure access to the medium and long term hinterland of the urban area (R3) and a possible smaller business node (refuelling station) on Road P33/3 to Potchefstroom.		10		12		A8
Community Nodes						
Provision of adequate lighting for security purposes at the taxi terminus in Viljoenskroon and the terminus in Rammulotsi. Maintenance of the areas, however, is a pressing shortcoming.	17, 19	22	29	13		T2 & 3
Urban Open Spaces						
▪ The upgrading and redevelopment of the existing sport facilities in both communities are reasoned an urgent priority.	14	18	9			S1 & 2
▪ The terrain is not suitable for any other use; especially not infill planning as a consequence of potential subsidence. Upon relocation of the existing landfill site, rehabilitation of the landfill site and quarry must be continued to safeguard the area.		20	26			S3
Cemeteries						
▪ Extension of the Viljoenskroon cemetery must commence but should be preceded by a geotechnical report.		21	9			C1

VILJOENSKROON/ RAMMULOTSI	NDP	MTSF	PSDF	FSGDS	IDP/ SDF	On Map
▪ Continuous maintenance of all existing cemeteries must be addressed by the Municipality to protect cemeteries against vandalism. The provision of ablution facilities and fencing of cemeteries is urgently required.	17		9, 28			C1, 2, 3, 4 & 6
▪ Extension of the newly established Northleigh cemetery should commence on areas not effected by a low groundwater table, characterised by the Viljoenskroon/ Rammulotsi environs. Possibilities exist for expansion on the Farms La Bella D' Afrique 254 (municipal owned) and Joffre 461 (privately owned).		21	9			C5
Other Social Amenities						
A policy/ bylaw must urgently be prepared to guide and assist faith based organisations in terms of requirements that need to be adhered to when applying for, and once a site has been obtained, in intercepting the unceasingly and incremental use of public open space and other social amenity premises.		18	4, 9, 27	24, 27		
E : INDUSTRIAL AREAS						
Industries						
▪ A small number of light industrial erven, also at the taxi rank and municipal offices, must also be considered for a broader commercial and business application.	13		17	17		I1
▪ Flooding in the industrial area, mainly as a result of stormwater from the adjacently located cultivated areas, is a grave concern and proper stormwater planning and management for the area needs to be endeavoured to prevent future flooding and associated damages to infrastructure and buildings.			28		3	I2
Extractive Industries (Mining)						
Ash dumps at Vierfontein, resulting from the former Vierfontein power station is a recyclable resource and could be utilised for road construction purposes. Gravel is exceedingly scarce and needs to be transported to the urban for all construction and road building activities.		6		6		

VILJOENSKROON/ RAMMULOTSI	NDP	MTSF	PSDF	FSGDS	IDP/ SDF	On Map
F : SURFACE INFRASTRUCTURE & BUILDINGS						
Landfill Sites						
▪ Following investigations (as a consequence of funding granted to the municipality), an area was identified to the south-east of Rammulotsi (on the Remainder of the Farm Northleigh 422, owned by the municipality) that must be developed as a landfill site.	17	21	26		8	D2
▪ Licensing and proper management of the landfill site at Renovaal, in close proximity of the Renoster River, must be addressed as a matter of urgency.			28	28	8	D

Rammulotsi: Infrastructure Services:
Water Provision
▪ Extension 9: Established, not occupied, serviced (not enough water pressure) ▪ Extension 10: Established, not occupied, no services
Sewer Provision
▪ Part of extension 8: Established, occupied, no services ▪ Extension 9: Established, not occupied, serviced (not functional requires pump station) ▪ Extension 10: Established, not occupied, no services
Electricity Provision
▪ Eskom service provider (Excluding Ext 5) ▪ Extension 8: Established, partially occupied, partially serviced ▪ Extension 9: Established, not occupied, no services ▪ Extension 10: Established, not occupied, no serviced
Viljoenskroon: Infrastructure Services:
Water Provision
▪ Extension 14: Established, not occupied, partially serviced (vandalised)

Sewer Provision
▪ Extension 14: Established, not occupied, partially serviced
Electricity Provision
▪ Extension 14: Established, not occupied, partially serviced

STEYNSRUS/ MATLWANGTLWANG	**NDP**	**MTSF**	**PSDF**	**FSGDS**	**IDP/ SDF**	**On Map**
D : URBAN RELATED						
Residential						
▪ Extension 3 was recently concluded (erven pegged and township register opened), comprising 804 residential erven, and is now utilised to relocate informal settlements – provision of services in the area is deemed critical.	14, 17	15, 18	9	18, 20	1, 4, 6	R1
▪ Council land, adjacent to the Kroonstad/ Bethlehem (M1) and Edenville Roads (M3), must timely be considered medium term residential extension.		14		22, 23	9, 11	R2
▪ Development on opposite sides of the Kroonstad/ Bethlehem road and across the existing Matlwangtlwang precincts, must ensure pertinent traffic measure to enhance pedestrian safety.	14	18	9, 28		9	
Central Business District						
The intersection at the Senekal/ Edenville and Bethlehem/ Kroonstad Roads offer commercial opportunities as part of the foreseen long term residential development (R2) and must be made available for this purpose, subject to feasible accessibility.	13, 14	14, 18, 21	9, 26	23, 24	9, 11	M1, 2 & 3
Community Nodes						
▪ The former taxi terminus must be made available for business/ commercial related development.	17, 19	11		14		T1
▪ A proper developed Taxi terminus is required in Steynsrus and must be provided.	17, 19	11		13		T3

STEYNSRUS/ MATLWANGTLWANG	NDP	MTSF	PSDF	FSGDS	IDP/ SDF	On Map
Urban Open Spaces						
▪ Identification of parks in Matlwangtlwang that may well be developed for sport and recreation purposes, is imperative.	14		6	27		
▪ The existing sport terrain in Matlwangtlwang must be further developed by providing multi-purpose, all weather courts and spectator stands.	14		6	15, 27		S1
▪ An exceedingly large open area in Matlwangtlwang, adjacent to "Jas se Spruit", being the result of decommissioned oxidation ponds, must be developed for urban agriculture activities.			7	1, 27		S3
▪ Riparian areas adjacent to "Jas se Spruit" must to be incorporated in an open space system, not considered for further development.	21		6	27		S4
Cemeteries						
▪ Must be developed, located in the vicinity of the existing Steynsrus sport terrain (S2), long term extension is limited due to clay soils and low ground water levels.						C3
▪ Investigations must commence should the above cemeteries reach their capacity and an alternative cemetery needs to be identified.		21				
▪ Continuous maintenance and protection against vandalism of unused cemeteries should be considered as a key priority.	17		28			
▪ The provision of ablution facilities and fencing of cemeteries is urgently required.	17		28			
Other Social Amenities						
▪ An urgent need is identified for the establishment of a Fire Brigade Station in the Rammulotsi urban area (Erf 3051, privately owned).	14, 17		28			
▪ A policy/ bylaw must urgently be prepared to guide and assist faith based organisations in terms of requirements that need to be adhered to when applying for, and once a site has been obtained, in intercepting the unceasingly and incremental use of public open space and other social amenity premises.	14	18	9			

STEYNSRUS/ MATLWANGTLWANG	NDP	MTSF	PSDF	FSGDS	IDP/ SDF	On Map
E : INDUSTRIAL AREAS						
Industries						
Agricultural related industrial development is feasible in the vicinity of the Steynsrus station. Similar activities have since been established in the area.	13					I2
Extractive Industries (Mining)						
Rehabilitation of previously exploited gravel quarries, now incorporated in the urban area, must be addressed.		8		8		G2 & 3
F : SURFACE INFRASTRUCTURE & BUILDINGS						
Landfill Sites						
The existing landfill site has recently been enlarged and is of adequate capacity to serve the larger area for the longer term. New “cells” should, however, timely be excavated to ensure sustainable utilisation thereof.	17		28		8	D

Matlwangtlwang: Infrastructure Services:
Water Provision
▪ Provided with water network ▪ Extension 2: Established, occupied, no services ▪ Extension 3: Established, not occupied, no services
Sewer Provision
▪ Provided with sewer network ▪ Extension 2: Established, occupied, no services ▪ Extension 3: Established, not occupied, no services ▪ Subdivision 7 & Portion of old town: Established, occupied, no services, (VIP system in use)
Electricity Provision
▪ Provided with electricity network

- Extension 2: Established, occupied, no services
- Extension 3: Established, not occupied, no services
- Eskom service provider

VIERFONTEIN/ RENOVAAL/ VAAL REEFS	NDP	MTSF	PSDF	FSGDS	IDP/ SDF	On Map
Vierfontein						
Further liaison and co-operation is required between the private property owners and the Moqhaka Municipality to ensure effective management of the areas.	9		9, 26			
Renovaal						
▪ Apart from limited extension possibilities adjacent to the Renoster River (R2), infill opportunities (R1) exist to further extend the Renovaal Village and is supported by the Municipality.	12, 16	17, 18	9, 13	24	11	R1 & 2
▪ Further development of these areas must favourably be considered, but subject to availability of services.		15				
▪ Further liaison and co-operation is required between the private property owners and the Moqhaka Municipality to ensure effective management of the areas.	9		9, 26			
Vaal Reefs						
Current informal settlements at the mining terrains need to be promptly addressed and resolved with the mining company to prevent the disorderly settlement.	18		28		9, 10	

ALIGNMENT MEASURES

Alignment Measures

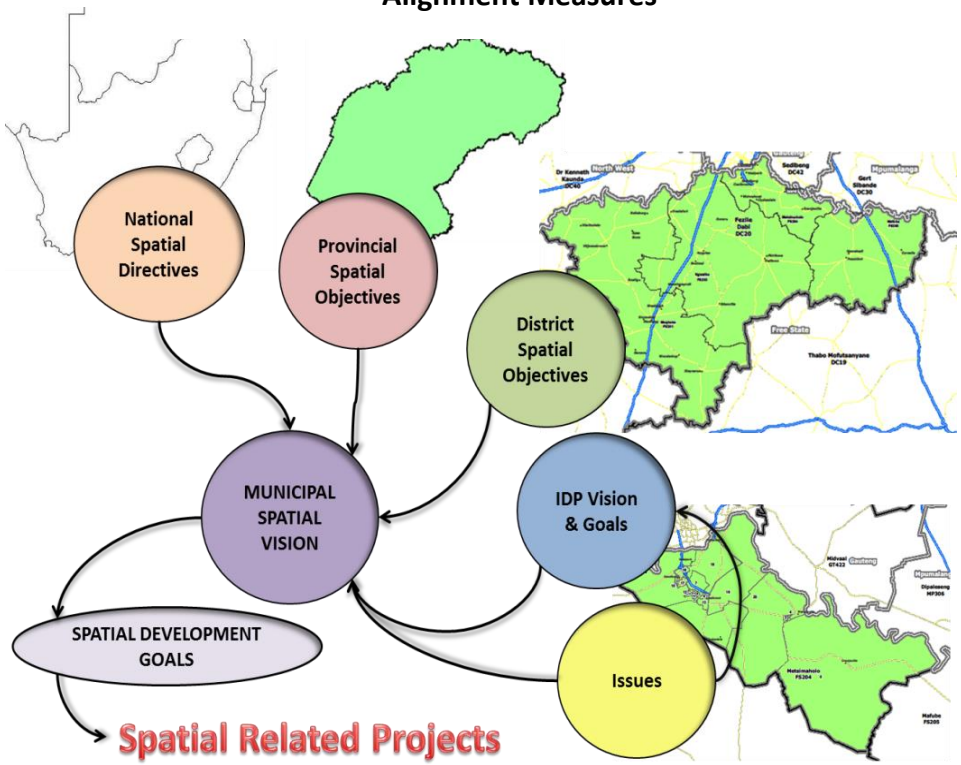
The vertical and horizontal alignments between the Moqhaka SDF and the other planning policies affecting and affected by this SDF are illustrated in this section.

Vertical Alignment

The vertical alignment shows the relationship and alignment between the proposals and policies of the National Development Plan (NDP), Mid Term Strategic Framework of the NDP (MTSF), Free State Provincial SDF (PSDF), Free State Provincial Growth and Development Strategy (FSPGDS) and Municipal IDP.

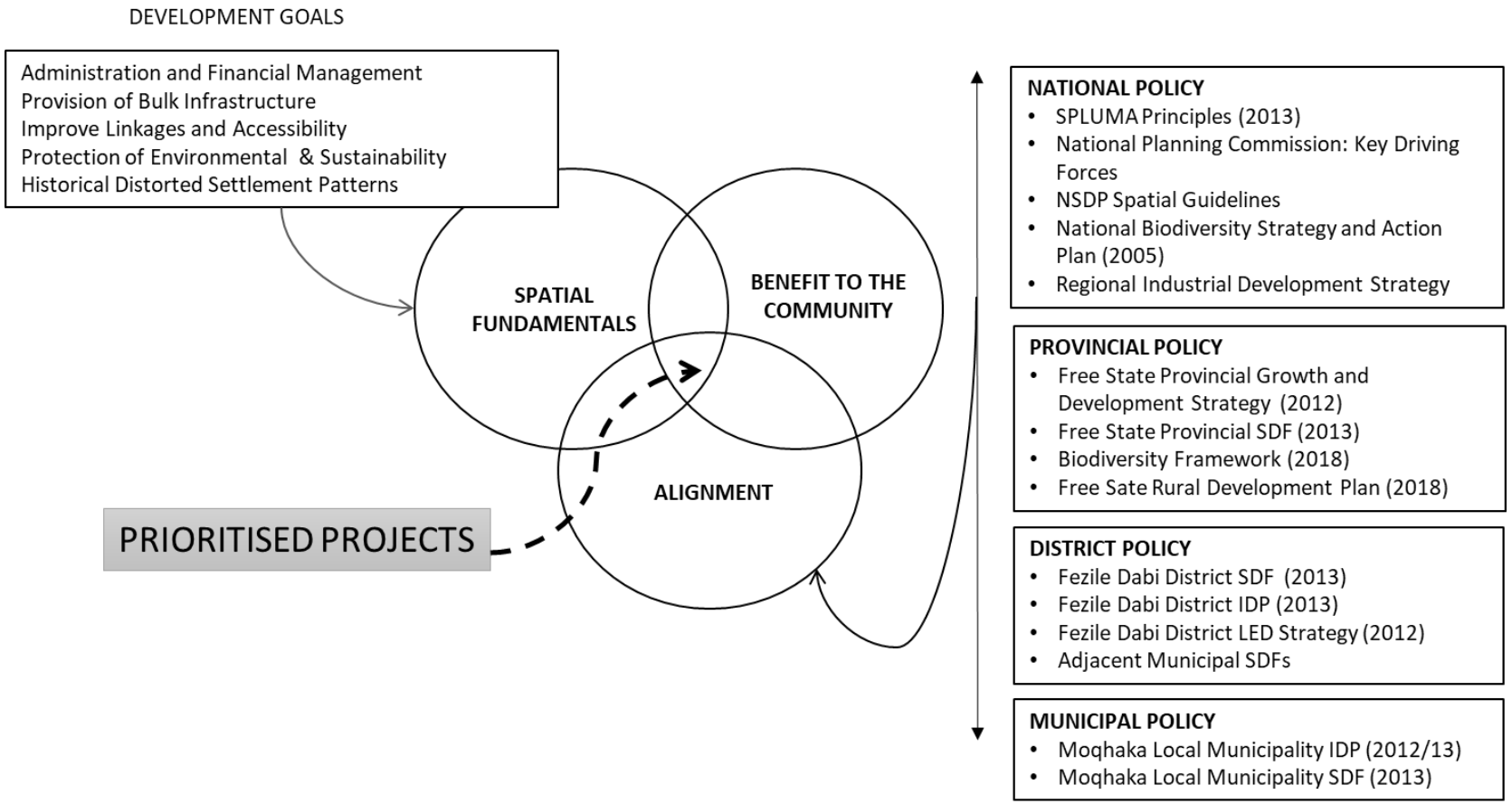
In attempting vertical alignment, several policies were assessed; especially the spatial related aspects thereof and spatial development goals and drivers, portrayed in these documents were summarised (refer to detailed tables in Annexure 2) to illustrate alignment between the spatial related projects identified in the Moqhaka SDF and assessed policies.

Figure 1:
Alignment Measures



The SDF will be a reflection of the competitive advantage of the Municipality in such a way that the proposed spatial vision of the Municipality reflects the role and function of the particular Municipality within the regional and in certain cases national spatial economy. Such an approach may inform and be informed by other sector department initiatives thereby achieving alignment. The vertical and horizontal alignments between the Moqhaka Local Municipality SDF and the other planning policies affecting and affected by this SDF are illustrated below and amongst other will include:

Figure 2: Horisontal Alignment



- **National Policy:** SPLUMA Principles (2013), National Planning Commission: Key Driving Forces, NSDP Spatial Guidelines, National Biodiversity Strategy and Action Plan (2005) and the Regional Industrial Development Strategy,
- **Provincial Policy:** Free State Provincial SDF (2013), Free State Provincial Growth and Development Strategy (2012), Biodiversity Strategy (2018), Free State Rural Development Pan (2018).
- **Approved Environmental Management Frameworks :** Vredefort Dome World Heritage Site EMF (2013), Moqhaka Municipality EMF (2013)

- **District Policy:** Fezile Dabi District SDF (2013), Fezile Dabi District IDP (2013), Fezile Dabi District LED Strategy (2012), Adjacent Municipal SDFs.
- **Municipal Policy:** Moqhaka Local Municipality IDP (2017/18), Moqhaka Local Municipality SDF (2013).

Horisontal Alignment

The horizontal alignment attempts to illustrate the relationship between the Moqhaka Municipality and the abutting municipalities and provinces. The main proposals affecting the abutting and overarching mentioned policy instruments are (refer to Figure 2):

- Continuous restructuring of settlements;
- Protect existing intensive agriculture from demands to convert it to urban development;
- Biodiversity conservation including ecological river corridors;
- Priority roads linking from surrounding municipalities to be carried through into the Moqhaka Municipality;
- Tourism - Similar to the Fezile Dabi District, the region experienced an increase in the tourism industry regarding weekend tourism destinations. Specific reference is made to the VDWHS, game ranches and guesthouses on farms;
- Industrial decentralisation – It is argued that the market based urban system, dependent on a few metropolitan cities, need not be the only paradigm of development available to the region. A strategy for balanced urban development could also be built by taking into consideration the experiences of a large number of small and medium towns and their growth potentials. A development strategy, designed by taking into consideration these factors and the strength of local level institutions, will indeed create a more dispersed urban system in the Province, which will be an alternative to the global model of urban industrial development, based on a few large cities;
- 'Dying small town syndrome' - A number of regional problems have surfaced over recent decades that have demanded the attention of planners and developers in so far as economic development of small and rural towns, in the broader Free State context is concerned. The 'dying small town syndrome' seems both the most intractable and the one that continues to capture the public's concern. Small towns face considerable economic development challenges. Development initiatives, at large, do not focus on the plight of the rural Free State, losing population or businesses, not thriving economically and there is widespread evidence that many small towns are in trouble.
- These problems include the sudden economic shocks caused by downturns in 'one industry towns' because of economic restructuring, continued 'emptying' of rural areas, the ongoing (and increasing) domination of larger urban areas and increasing disparities within and between regions across a wide range of social and economic indicators.

Cross Border Issues

The Moqhaka Municipality borders the North West Province. It also shares the VDWHS with the North West Province and the Ngwathe Municipality. Only three of the farms (and the adjacent buffer areas) included in the VDWHS, fall into the Ngwathe Municipality. Several small farms and plots, tourist attractions and other rural amenities (general dealer, rural school etc.) on the Vaal River riparian, are located directly across from Parys. Although the properties are not in the Ngwathe Municipality, Parys is the nearest centre thereto and renders various services there. Parys is also the "port of entry" for numerous tourists to the area.

Although not directly linked with the Dihlabeng Municipality, possibilities exist for the Moqhaka Region to benefit from the Lesotho Highlands Water Scheme. Water could be pumped from the Liebenbergsvlei River, for approximately 17 km, to the upper catchment areas of the Vals River, near Bethlehem, warranting a regular source of raw water to both Steynsrus and Kroonstad, especially during periods of low rainfall and when the Vals River does not provide an adequate supply. The recent and devastating drought of 2016, saw the latter alternative of raw water provision as a viable options to address the long term raw water needs of the Moqhaka and Nala Municipalities (Bothaville is located approximately 80 km downstream from Kroonstad, adjacent the Vals River).

Dr. Kenneth Kaunda District and JB Marks Local Municipalities

VDWHS is located within both the North-West and the Free State Provinces. It falls under the jurisdiction of the Dr. Kenneth Kaunda District and JB Marks Local Municipalities in the North-West Province and the Fezile Dabi District and Moqhaka and Ngwathe Local Municipalities in the Free State Province.

Metsimaholo SDF

High density and other developments adjacent the Vaal River are becoming more popular, although it has to adhere to specific health standards, set by the Department of Water Affairs. The Vaal River also delineates the Moqhaka region on its northern extremes and controlled development adjacent the river is deemed an urgent priority. Due to the important role played by the Vaal Dam and the Vaal Barrage and Lower Vaal River (in the Moqhaka Region) in providing potable water to the economic heartland of the republic and its neighbouring regions, decisive measures are deemed inevitable to limit pollution of these sources to the minimum.

Ngwathe SDF

The area is underlain with rich coal and the gradual exploitation of coalfields in the Sasolburg vicinity will evidently lead to these areas being mined. The Free State Department of Mineral Resources indicated that several prospecting rights have, of late, been granted for the areas located between Kroonstad and Parys. Future mining will necessitate a holistic approach regarding infrastructure provision.

Nala SDF

The Municipality is located within a significant agricultural region and is included in the ‘Maize Triangle' of South Africa. Bothaville is strategically located in proximity of the gold deposits at Klerksdorp/Orkney and Wesselsbron is in close proximity of Welkom/Odendaalsrus. The Municipality is directly dependent on these large urban centres for institutional and commercial support. Although there are no significant road linkages with the Moqhaka Municipality, the Kroonstad/Bothaville road links the two urban areas. The road, however, is an extreme derelict condition and rebuilding thereof is deemed an urgent priority ensuring the uninterrupted flow of agricultural produces and equipment.

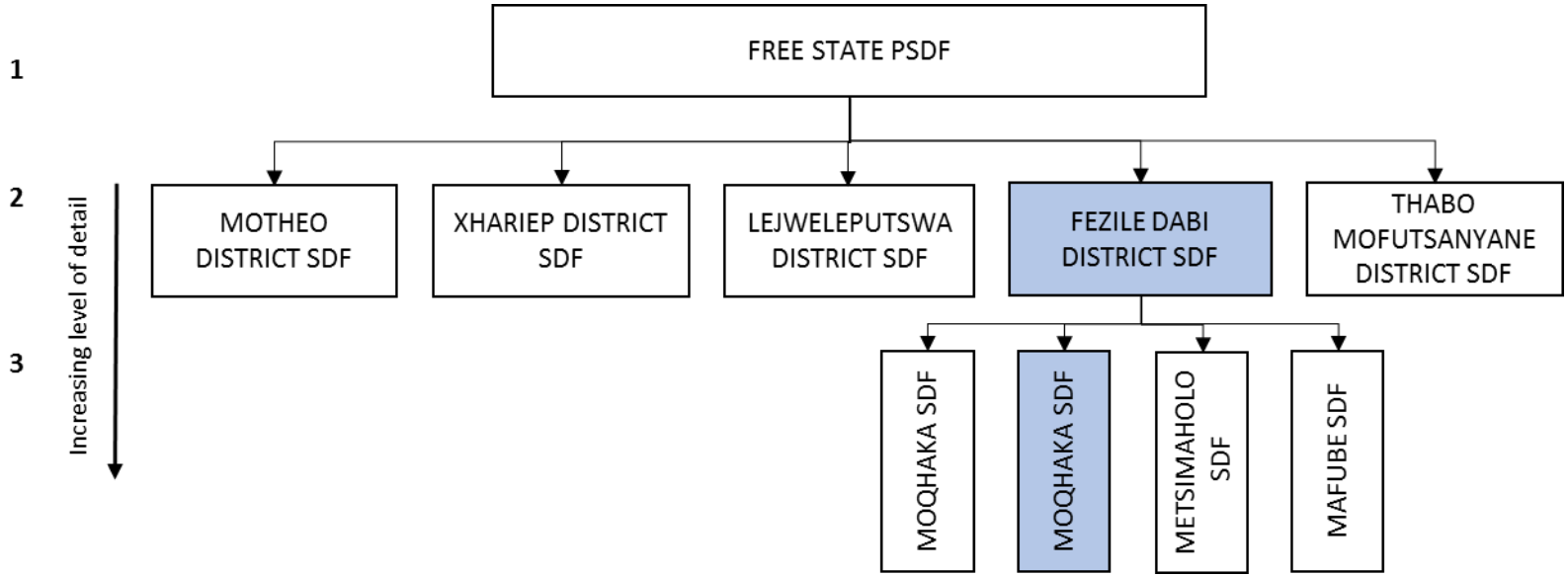
Matjhabeng SDF

Significant road linkages and agriculture related aspects are the most predominant alignment measures. The most direct road link from Matjhabeng to the N1 and further north, is via Kroonstad. The Municipality plays host to two toll plazas on two major roads in the province; the Verkeerdevlei Plaza on the N1 is the last before entering Bloemfontein from the north, and the Brandfort Plaza on the former R30 (now ZR Mahabane Road) is situated between Brandfort and Bloemfontein.

Setsoto & Nketoana SDF

Apart from overarching issues mentioned, amongst other significant road linkages and agriculture related aspects, no specific horizontal alignment issues were identified with the Setsoto and Nketoana SDF's.

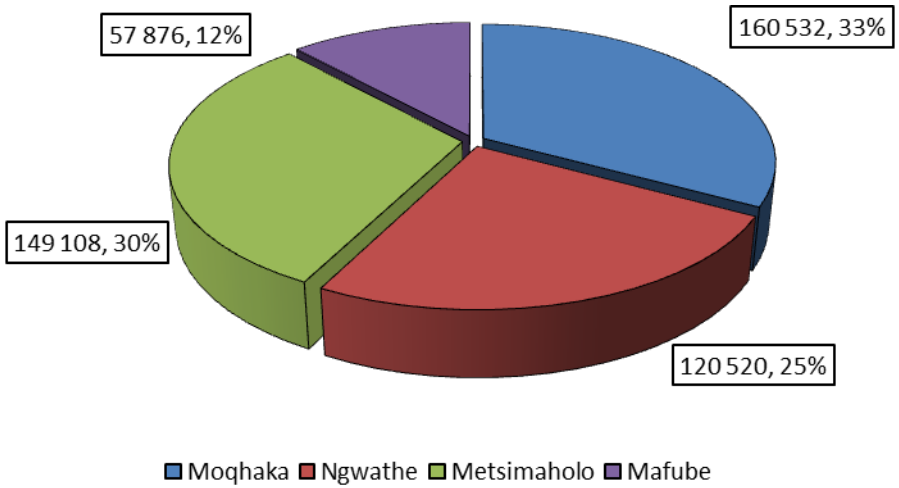
The area of jurisdiction of the Fezile Dabi District Municipality includes Metsimaholo Municipality (Sasolburg, Deneysville and Oranjeville), Mafube Municipality (Frankfort, Tweeling, Cornelia and Villiers), Moqhaka Municipality (Kroonstad, Steynsrus and Viljoenskroon) and Ngwathe Municipality (Parys, Heilbron, Koppies, Edenville and Vredefort). The area comprises nearly 2 000 privately owned farms and is approximately 222 210 square kilometres in extent.



The area of jurisdiction of the Moqhaka Local Municipality is situated in the southern part of the Fezile Dabi District Municipality region. The former Kroonstad, Steynsrus and Viljoenskroon Transitional Local Councils and sections of the Riemland, Kroonkop and Koepel Transitional Rural Councils are included in the Moqhaka Region. The total estimated residents in the Moqhaka Region, according to Council preferred data, is 160 532.

- Constituting 6.0 % of the population of the Free State (total population: 2 745 590);
- Presents 31.5 % of the Fezile Dabi District, comprising a total of 45 661 households;
- The general tendency of migration from rural to urban areas is also occurring in the area (82 % urban and 18 % rural), as is the instance in the rest of the Free State Province. The majority of the rural population is active within the agricultural sector.

Figure 3
Fezile Dabi District Population Distribution
(Source: Census 2011)



The general tendency of migration from rural to urban areas is also occurring in the area, as is the instance in the rest of the Free State Province. The majority of the rural population is active within the agricultural sector. Regarding the population distribution (see Table 5), the area is largely urbanised (78 % urban and 22 % rural). In comparison to the other regions within the Fezile Dabi region, it appears as if the Moqhaka Region is significantly less urbanised. However, the large rural population of the region is attributed to the fact that the population of the Vierfontein and Renovaal villages as well as the Vaal Reefs hostel complex and informal settlement (see Table 8) are included in the rural population of the Moqhaka Region.

The Greater Kroonstad is the centre of a large agriculture community that plays an important role in the economy of the region. Industrial activities subsequently contribute significantly to the districts economy. The Department of Correctional Services and the School of Engineer's Military bases are situated in the town. Kroonstad has of late become a distinguished holiday destination due to the ultra-modern and popular holiday resort of Kroonpark, adjacent to the Vals River. The urban area is situated adjacent the N1 National Road and located adjacent one of the largest and most important four-way railway junctions in South Africa.

The Viljoenskroon/ Rammulotsi urban area is located within an area of extreme agricultural significance. The urban area plays a significant role in providing residential opportunities to the adjacent Goldfields and mining activities in the North West Province. The provincial roads P15/1 and P15/2 from Kroonstad to Klerksdorp in the North West Province extend through the area from north to south.

The Steynsrus/ Matlwangtlwang urban area is situated approximately 45 km east of Kroonstad, 92 km west of Bethlehem. The major link road between Bethlehem and Kroonstad stretches adjacent to the urban area. The area is located in an area of agricultural significance and mainly provides services in this regard to the surrounding rural areas. More specialised services are rendered by Kroonstad as a large service centre in close proximity of Steynsrus. The accessibility of the town, due to the main road and railway line, further influences growth in the area.

In addition to the existing formal urban areas, several residential areas and proclaimed town areas are situated in the Moqhaka Region with reference to Renovaal, Vierfontein and the Vaal Reefs hostel complex. Renovaal was established during 1974 adjacent the Vaal River with the intention to provide residence in the proximity of the gold mining activities in the North West Province. The town was also later marketed as a leisure residential area with recreation potential adjacent the Renoster and Vaal Rivers. Development of the town is, however, extremely latent and only the proposed first phase of the town was established. According to Proclamation No 167 of 1975, the concerned area represented by General Plan SG No 459/1974, was proclaimed a township under the name Renovaal.

Vierfontein (referred to as “Vierfontein South”) is also a proclaimed town. The area was initially developed to provide residence for workers at the adjacent mine and electricity power station and was owned by Eskom. After mining activities ceased and the power station discontinued, a township establishment was done to formalize the existing town area during 1993. According to Proclamation No 35 of 1995 (Provincial Gazette of 24 February 1995), the concerned area represented by General Plan SG No 786/1993, was proclaimed a township under the name Vierfontein. The individual properties were sold and the majority of the inhabitants of Vierfontein are retired residents with a limited number of inhabitants that are employed in Viljoenskroon.

To the north of the town Vierfontein, a sectional title scheme was established that is referred to as “Vierfontein North”. As in the instance of Vierfontein, this sectional title scheme also developed to provide residence for workers at the Vierfontein mine and power station, but most of the current inhabitants are also retired. The area was developed by the Dutch Reformed Church who was the initial property owner of the concerned farms. The concerned farms are currently the property of Vierfontein Developers Group Scheme who is also the current home owners association.

Small villages (at Great Noligwa, Kopanang and Moab Khotsong Mines - see Figure 8B) and hostel complexes were developed at Great Noligwa and Kopanang mines, in proximity of Viljoenskroon (adjacent to the Vaal River) although Orkney acts as central place[1] for the these areas that comprise an approximate 3 000 hostel units with an estimated population of 9 000 residents (refer to Vierfontein under section 10 for more details).

Apart from the dominant role agriculture plays in the region, no other significant economic activity exists. The study area, like the rest of the Fezile Dabi Region, is not considered as a primary tourist destination, although the area is increasingly becoming a favourite weekend destination. The hunting and guesthouse industries displayed an exceedingly rapid growth the past few years. Recreation areas and facilities are predominantly confined to the urban areas. The Kroonpark recreation and holiday resort in Kroonstad attracts interest throughout the region.

The Vaal River borders the Moqhaka Region to the west. The Vals and Renoster Rivers drain through the area towards the Vaal River. These rivers play a significant role in providing the raw water supply to Kroonstad, Steynsrus and Viljoenskroon respectively. The topography of the area is particularly homogeneous with no prominent features and the area is characterised by extremely moderate slopes. The western areas, in the vicinity of Viljoenskroon, are known for various shallow and non-perennial pans.

[1] The “Central Place Theory “ was created by the German geographer Walter Christaller, who asserted that settlements simply functioned as 'central places' providing services to surrounding areas.

LEGISLATIVE CONTEXT AND CONSULTATION PROCESS .2

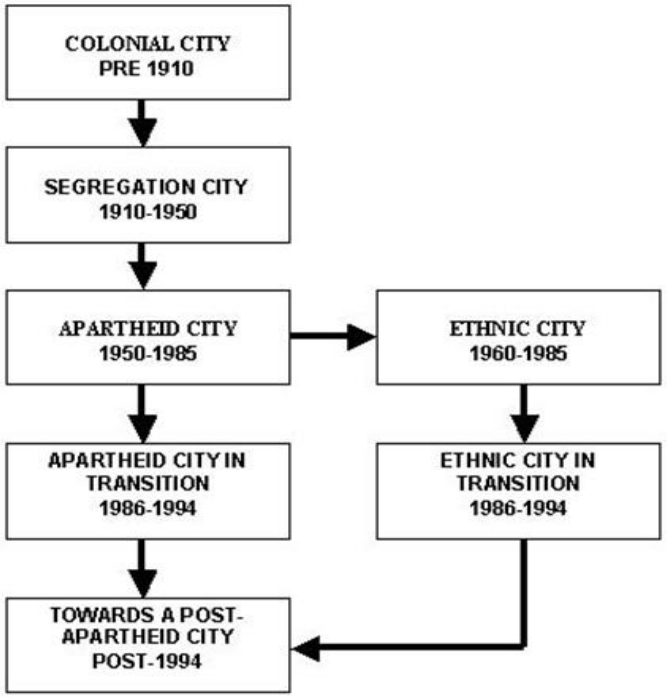
2.1 Legislative Context

2.1.1 Historical Course of Legislation and Guidelines

The historical development of urban areas in South Africa experienced a dramatic evolution since its origination as typical colonial cities, through a racially segregated development urban form, with challenges now presented to integrate urban areas and address spatial imbalances:

- 1910: Colonial City
- 1950: Segregation City as a consequence of discriminating legislation
- 1985: Apartheid City with a neighbouring segregated "Ethnic City"
- Since 1985: Apartheid City in Transition
- 1994: Post-Apartheid City, strongly advocated by the repealing of discriminating legislation and replacement thereof by interim legislation and development guidelines
- 2016 "Integrated City" as a consequence of revised legislation addressing, amongst other, spatial distorted settlement patterns

The summary below illustrates the historical course that ultimately leads to the preparation of SDFs, now comprehensively outlined in the Spatial Planning and Land Use Management Act (SPLUMA, Act 16 of 2013).



	Legal Directives		Guidelines
1980	Desegregation since the mid-1980s when Group Areas and Population Registration Acts in 1991 were repealed	Structure Plans/ Separate Town Planning Schemes and Land Use Regulations (Annexure F)	▪ Ordinances ▪ Black Communities Development Act
1993	Local Government Transitional Act	TLC (Transitional Local Council) and TRC (Transitional Rural Council)	▪ New Structures ▪ Demarcation
1994	Reconstruction & Development Program (RDP)	▪ Integrated & sustainable development ▪ Reconstruction of human settlements. (spatial injustices)	6 Principles to enhance and promote post-apartheid government structures and development
1995	Development Facilitation Act (DFA)	Land Development Objectives (LDOs TLC & TRC)	CSIR: IDP Process Manual (1995)
1996	Amended Local Government Transitional Act	IDPs	
1999	Demarcation of the Country	Interim IDPs for newly demarcated Municipalities	
2000	Municipal Systems Act & Regulations for Amendment	IDP & Sector Plans (SDF is deemed a Sector Plan to the IDP)	CSIR IDP Guide Packs (Providing for SDF as a Sector Plan)
2000	Municipal Systems Act, 2000 (Act 32 of 2000) & Regulations for Amendment	IDP & Sector Plans SDF is deemed a Sector Plan to the IDP)	DRDLR: Guidelines for the development of SDFs (Introduction of GIS) (2011)
2013 to 2017	Spatial Planning and Land Use Management Act & Municipal Systems Act	Preparation of SDFs Preparation of IDPs	▪ 2013 SALGA: Guidelines to assist municipalities with the formulation of Spatial Development Framework ▪ 2014 DRDLR: Guidelines for the development of SDFs (not yet implemented)
2019	Future Reviews will be conducted according the SPLUMA and the MSA and new SDF guidelines (2014) prepared by the DRDLR		

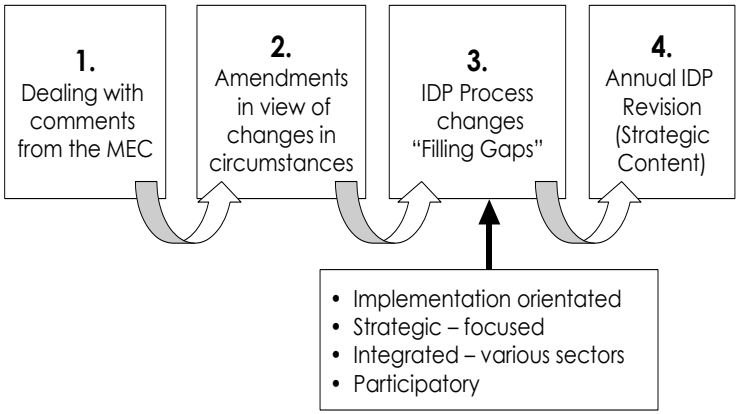
Source: Own Construction, 2018

2.1.2 The Municipal Systems Act

Every Municipality in South Africa must adopt a single, inclusive and strategic plan for the development of the Municipality and every Municipality must give effect to this plan, the Integrated Development Plan (IDP), and conduct its affairs in a manner that is consistent thereto. The emergence of integrated development planning is strongly linked to the drive since the early 1990s towards addressing South Africa's legacy of the apartheid system through a so-called integrated approach to planning. One of the very first definitions of integrated development planning in South Africa was provided in 1994 by the Reconstruction and Development Plan (RDP) : "*A participatory approach to integrate economic, sectoral, spatial, social, institutional, environmental and fiscal strategies in order to support the optimal allocation of scarce resources between sectors and geographical areas and across the population in a manner that provides sustainable growth, equity and the empowerment of the poor and the marginalised*."

The Municipal Systems Act (MSA), Section 34, is also clear in stating that "*A municipal council (a) must review its Integrated Development Plan annually according to changing circumstances and (b) may also amend an existing Integrated Development Plan*". Considering the Act, it is evident that the Municipality should promptly consider procedures to, as part of the annual reviewing of their IDP, also review the SDF. Similar to the IDP revision, the SDF revision will in principle deal with the following:

- *Comments from the MEC:*
  The MEC commented on the Council-adopted IDP and these comments should involve consideration of amendments to the IDP.
- *Amendments in Response to Changing Circumstances:*
  The MSA (Section 34) makes provision for the amendment of the IDP to the extent that changes in circumstances require. This means that while changes in circumstances are taken into account as part of the annual review, Municipalities are not prevented from making amendments throughout the year if circumstances require it.



- *Improving the IDP Process:*
  Especially after the first round of IDP, many process related issues and prepared plans and programs may not be resolved or may require refinement. It may be necessary to effect institutional, process or content related changes to ensure that the review process incorporates those

changes or amendments that are necessary to ensure that the Integrated Development Planning Process is strategic, implementation orientated, participatory and integrated.

2.1.3 The Spatial Planning and Land Use Management Act

Section 21 of the SPLUMA is specific in so far as the contents of a municipal SDF is concerned, it must:

- Give effect to the development principles and norms and standards
- Provide a future spatial structure (nodes, corridors, activity spines etc.)
- Indicate areas where investment should be prioritised and indicate those areas where:
  - Inclusionary housing should be developed
  - Incremental upgrading approaches to development and regulation will be applicable
  - More detailed local plans are needed
  - Shortened land use development procedures may be applicable
- Represent integration and trade-offs between sector plans
- Guide planning and development decisions across all sectors of government
- Address historical imbalances
- Identify long term risks of particular patterns of growth and propose strategies to address those risks
- Provide directions for
  - Strategic developments
  - Infrastructure investment
  - Efficient, sustainable and planned investments by all sectors
  - Include priority areas for investment in land development
- Guide decision-making regarding all spatial planning and land use management systems
- Coherent planned approach to spatial development
- Provide clear and accessible information to private sector investment
- Include
  - Previously disadvantaged areas

- Areas under traditional leadership
- Informal settlements & slums
- State owned enterprises and agencies

- Create environment to encourage trust and development
- Recognise environmental planning instruments
- Give effect to national policies on
  - Mineral resources
  - Sustainable use and protection of agricultural resources

2.2 Guidelines

Comprehensive guidelines prepared by the Department of Rural Development and Land Reform during 2010, the Spatial Planning and Land Use Management Act (2013) and specific requirements by the Provincial Government served as point of departure for the preparation of the Moqhaka SDF.

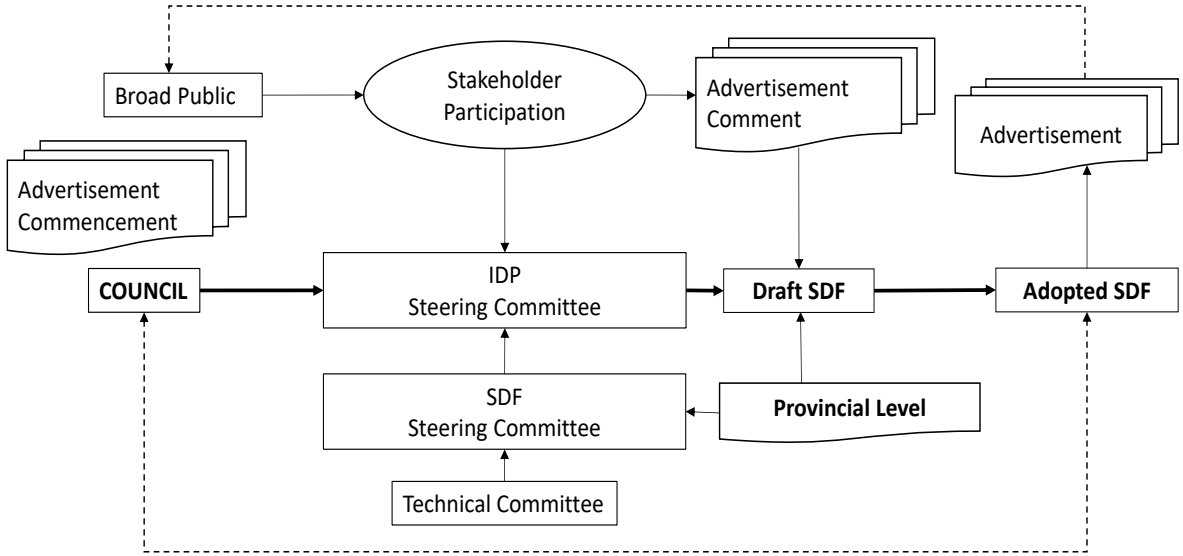
The Spatial Development Framework (SDF) intends to guide desired patterns of land use, directions for future growth, indicate the alignment of urban edges, and depict other special development areas. The impact of the SDF is limited to providing policy to guide and informing land development and management. It does not change or confer real rights on land. The SDF plays an important role in guiding appropriate future change and providing motivations as to the need and desirability, or not, of proposed land use changes. Because of the guiding and informing nature, the SDF also has a number of other important roles, amongst other:

- To give effect to norms and standards and the development principles contained in the SPLUMA;
- Setting out objectives that reflect the desired spatial form over a 5 year and longer 20 year term;
- Defining strategies and policies to achieve these objectives that must indicate, amongst others:
  - the desired pattern of land use;
  - optimise the use of resources and infrastructure;
  - how spatial reconstruction will be addressed; and
  - providing strategic guidance in respect of the location and nature of development.

- Include a strategic assessment of environmental pressure and opportunities and spatially indicating environmental sensitivities and high potential agricultural land;
- Reflect on agricultural land to be enclosed in the urban area;
- Identify programs and projects for development of land and set out a capital investment framework for development programs;
- Achieve alignment with neighbouring Municipal SDF's, the Fezile Dabi District SDF and the Free State Provincial SDF (PSDF);
- Reflect on National, Provincial, District and Municipal policy (Moqhaka Municipality IDP);
- Provide a visual representation of the designed spatial form with the Municipality in the form of a map(s).

2.3 Participation Structure

The existing IDP Steering Committee is deemed the official structure to give effect to the IDP review process. It is, however, necessary to establish a structure to deal with the SDF sector plan's review process. The SDF Steering Committee, with possibilities to also establish a SDF Technical Committee (from time to time and if deemed necessary) is therefore constituted. The SDF Steering Committee will, amongst other, guide and coordinate the process and propose a draft SDF for ultimate adoption by the Council. It will ensure that key deliverables are attained within the time frames and all document outputs. In order to ensure continuity, it is not deemed necessary to establish additional structures to deal with the SDF review process.



A needs analysis was endeavoured by the Municipality in the various wards, as part of its annual budget and IDP review processes. Alignment with the District Municipality will be attained through attending formal alignment sessions scheduled by the District Municipality during its SDF review process and vice versa inviting the District Municipality to sessions of the SDF Steering Committee. Governmental role-players and parastatals will be invited to

attend SDF Steering Committee sessions in order to obtain their inputs and will, through the advertisement process, also be required to comment on the Draft SDF prior to its adoption. Review of the Municipality's SDF is thus seen as an inclusive process involving authorities and the larger community and ensuring a uniform and holistic approach by means of continuous consultation.

2.4 Methodology

2.4.1 Implementation

The following distinctive implementation phases will be followed in preparing the SDF:

▪ **Phase 1:** Start up	Project Plan and agreeing on structure, first IDP Steering Committee session.
▪ **Phase 2:** Issues and Vision	Phase 2 is a review of the public consultative process through which issues and a vision are obtained from the local Council, internal departments, the public, other municipalities and government departments. A summary of the issues and vision will be produced. This provides a broad perspective of the spatial issues of concern.
▪ **Phase 3:** Status Quo (Analysis)	Produce a status quo report which documents a "Spatial Analysis" of the Municipality. This will involve analyses of the applicable policy informants; existing sector plans, natural environment, socio-economic and environmental, built environment and will include the issues and vision from the previous phase.
▪ **Phase 4:** Synthesis and draft SDF	Produce the draft SDF containing objectives, a conceptual framework and sub-area proposals suitable for public consultation.
▪ **Phase 5:** Achieving Support for the SDF	Public consultative process to obtain inputs/ comments from the various stakeholders on the draft SDF from Phase 4.
▪ **Phase 6:** Finalisation and Approval of the SDF	Produce a final SDF which incorporates the comments obtained on the draft SDF in Phase 5 as well as produce an implementation plan and a monitoring and evaluation framework.
▪ **Phase 7:** Implementation	This phase, usually not part of the consultant's brief to prepare the SDF, is conducted by the Municipality. It involves actual implementation, ongoing monitoring and evaluation of the SDF, and its updating and review where required.

2.4.2 Critical Milestones and Deliverables

Deliverables will include aligned *SPATIAL PROJECTS,* A *VISION* AND SPATIAL RELATED *DEVELOPMENT GOALS* (Phase 2), *status quo analysis* (Phase 3), an interim *draft SDF* (Phase 4) and the *final SDF* (Phase 6), all accompanied with relevant plans and development proposals.

3.1 Community and Stakeholder Analysis

The following spatial related issues were identified by the community during the SDF and IDP processes:

Kroonstad	Viljoenskroon	Steynsrus
Non-spatial related, cross cutting issues: ▪ Improve overall service delivery. ▪ Availability of taxi's after hours and the uniform identification and marking of taxi's. ▪ Implement a cleaning programme for all urban areas. ▪ Community awareness and involvement regarding littering and refuse dumping. ▪ Municipality assistance in empowering small local businesses conductive growing environment. ▪ Unemployment amongst the youth, threatening stability. **Spatial related, cross cutting issues:** ▪ Community awareness regarding environmental conservation (especially conservation of existing trees). ▪ Improvement of the general appearance of the urban area. ▪ Roads and stormwater: Roads are not well maintained. Roads and streets maintenance plan should identify streets for upgrading and new streets to be constructed. ▪ Sanitation: Maintenance of network to duly address blockages, burst pipes and spillages, polluting the Vals River as primary raw water source to Kroonstad and Bothaville. ▪ Water: Raw water sources, more especially in Steynsrus/ Matlwangtlwang, are a critical challenge. Water quality is unacceptable. ▪ Electricity and Streetlights: Most of the high mast lights are out of order and in need of repair/ maintenance in support of a safer community.		

Kroonstad	Viljoenskroon	Steynsrus
A: CORE / BUFFER		
▪ Overall greening strategy for the urban area ▪ Rehabilitation of wetlands/ wetland areas through Snake Park and southern portion of Marabastad. ▪ Effective development and utilisation of the entire riparian area. ▪ Polluting of raw water resources due to sewer spillages.	▪ General greening and tree planting in the area. ▪ Polluting of raw water resources due to sewer spillages.	▪ General greening of Matlwangtlwang. ▪ Polluting of raw water resources due to sewer spillages.
▪ Development of all parks in Maokeng. ▪ Upgrading of: - the Seeisoville sport stadium, - public community halls, - parks in Brentpark, - Nyakallong resort, - taxi routes in the Relebohile area to improve accessibility. ▪ Establishment of: - a centrally situated sport stadium in Maokeng, - Multipurpose facilities, - sport grounds, - Taxi embarking and disembarking points.	▪ Development of open spaces in Rammulotsi and Viljoenskroon for sport and recreation. ▪ Improved development of the sport facility at the existing dumping site. ▪ Proper supervision by the Municipality over community facilities. ▪ Maintenance of the swimming pool in Viljoenskroon. ▪ Upgrading of: - existing sport facilities and accessibility thereof, - existing bus rank in Rammulotsi and Viljoenskroon ablution facilities. ▪ Establishment of: - a multi-purpose community centre in Rammulotsi,	▪ Further development of the terrain regarding multipurpose “combo courts” to accommodate other sport activities (e.g. tennis, cricket etc.). ▪ Upgrading of: - existing sport terrain in Matlwangtlwang, - the existing swimming pool and accessibility thereof, - taxi rank in Matlwangtlwang including provision of ablution facilities. ▪ Establishment of: - a community hall in Matlwangtlwang to also cater for indoor sport and recreation.

Kroonstad	Viljoenskroon	Steynsrus
	- Sheltered taxi embarking/ pickup points along main collector roads.	
E: INDUSTRIAL AREAS		
▪ More viable industrial area optimising the N1 bypass road. ▪ To review industrial incentives to promote investment.	▪ To review industrial incentives to promote investment.	▪ Enhance the agri-industrial character of Steynsrus.
F: SURFACE INFRASTRUCTURE & BUILDINGS		
▪ Upgrading of the railway station and network.	▪ Electricity provision to the Northleigh Extension in Rammulotsi.	
▪ Illegal dumping. ▪ Urgent relocation of the landfill site. ▪ Addressing of social concerns at dumping areas.	▪ Effective waste management to ensure conservation (including existing illegal incineration of refuse). ▪ Illegal dumping. ▪ Urgent relocation of the landfill site. ▪ Addressing of social concerns at dumping areas.	▪ Illegal dumping.

3.2 Integrated Development Plan Vision and Mission Statement

The first comprehensive prepared SDF was revised during the first review cycle of the IDP Process during 2003/04 and further improved and amended in view of comments from the MEC and in response to changing circumstances for the 2004/05, 2005/06, 2006/07, 2008/09 and 2009/10 cycles. Finally, following a period of no review, the most recent SDF was concluded during March 2017. The Municipality, however, prepared a comprehensive IDP for the 2012-2017 financial years. The Municipality agreed on the following Vision and Mission statement in the IDP:

VISION

"Moqhaka Local Municipality strives to be a Municipality that creates an environment for socio economic growth and sustainable development."

MISSION STATEMENT

"To maintain and enhance quality of life by providing effective, efficient quality and affordable services equitably and facilitating sustainable socio economic growth through active community participation."

3.3 Spatial Vision and Spatial Development Goals[2]

3.3.1 Long-Term Spatial Vision

The SDF Technical Committee was tasked to prepare statements on the long-term spatial development of the region. The ensuing development goals were prepared during a formal session of the SDF Technical Committee:

Long Term Spatial Vision: 2030

"Moqhaka, as an integrated spatial unit, responsibly catering for all community development needs."

[2] According to Section 12 (Chapter 4) of SPLUMA

3.3.2 Spatial Development Vision

Spatial Development Vision: 2020

"A regional and national role-player, serving the Free State and beyond, cognisant of the natural environment, promoting social and economic inclusion through mining, tourism, industrial and agri-industrial related development."

3.3.3 Spatial Development Goals

Cross Cutting Goals
▪ Continuous community consultation prior to any spatial framework changes should be adopted as a principle. ▪ Revitalisation and re-population of the rural areas are considered as significant to enhance development of the region.

A: CORE & B: BUFFER
▪ Developments aligned with environmental legislation and policy and cognisant of protecting the environment and the optimisation of natural resources. ▪ To promote the optimal development and utilisation of the unique tourism potential of the Moqhaka region, whilst not compromising the outstanding universal value of the adjacent VDWHS and unduly impairing the safe, undisturbed and quiet enjoyment of the area.

C: AGRICULTURAL AREAS
▪ Enhancement of current predominant agri-industrial development focus, with access to agricultural land, commonage and all urban agriculture endeavours to the benefit of the broader community. ▪ Responsible utilisation and control measures (carrying capacity) of commonage and agricultural resources and the protection of high potential agricultural land.

D: URBAN RELATED
▪ Meeting SPLUMA requirements for spatial justice. ▪ Employing norms and standards in ensuring the availability of amenities in all urban areas; restricting conversion thereof into other land uses[3]. ▪ Inclusionary housing[4] developments must ensure differentiation in typologies and provide for densification and infill planning intercepting sprawl. ▪ An integrated and efficient land use management system to be implemented, ensuring unhindered progression of the development processes.

E: INDUSTRIAL AREAS
▪ Kroonstad will remain the primary industrial focal point of the region with strong agri-industrial focuses in Viljoenskroon and Steynsrus. ▪ Continual expansion of the industrial zones must procure preference.

F: SURFACE INFRASTRUCTURE & BUILDINGS
▪ Development should be feasible; especially in relation to the availability of infrastructure services. ▪ Access to services must be ensured to the broader community. ▪ Infrastructure and bulk service delivery must continually focus on: - eradication of backlogs; - maintenance; - upgrading; - new infrastructure to meet development needs; and - appropriate service provision to new precincts.

3.4 Conduction of Public Consultative Processes

Prior to adoption of the SDF by the Council, public consultative processes were conducted, comprising two distinctive phases. As discussed in par 3.1 above, the initial public consultative process was conducted on a ward basis. The process was in the form of public participation/ debate on what the

[3] CSIR Guidelines for the Provision of Social Facilities in South African Settlements – Medium Towns (First Edition: August 2012).

[4] As per Section 21 (i) SPLUMA and defined in the Moqhaka LUS as a mixed housing development, comprising different affordable housing typologies with diverse densities that may be rental units or privately owned, accessible to public transport and related social amenities and may include RDP and GAP housing, semi-detached and or row housing, dwelling houses and the like to the satisfaction of the Municipality.

priority issues are and what appropriate way and means are of dealing with identified priority issues. This was done as part of the IDP process. Broad public consultation was subsequently obtained, in terms of Section 20(3)(a) of the Spatial Planning and Land Use Management Act, Act 16 of 2013 and Section 4(2) of the Moqhaka Land Use Planning By-law. Apart from placing the Draft 2017/2018 SDF and all maps on the municipal and service provider's websites, advertisements, affirming the above, and calling for comment, were placed in the Provincial Gazette and the following general circulating papers:

Paper		**Date of Advertisement**	**Language**
1.	Provincial Gazette[5]	4 May 2018	Afrikaans & English
2.	Kroon Nuus	20 February 2018	Afrikaans & English
3.	Free State Sun	21 February 2018	Afrikaans & English
Comment period lapsed after 60 days, as legally required.			

[5] Spatial Planning and Land Use Management Act, Act 16 of 2013: The Municipal Council of a municipality must by notice in the Provincial Gazette adopt a Municipal Spatial Development Framework (SDF) for the Municipality. Before adopting the SDF, and any proposed amendments to the SDF, the Municipal Council must give notice of the proposed SDF in the Gazette and media inviting the public to submit written representations in respect of the proposed SDF within 60 days after publication of the notice referred.

4.1 Demographic Realities

Table 1 indicates the current total population of the Fezile Dabi District, by reflecting on the population per Local Municipality.

Table 1
Population: Moqhaka Region (Fezile Dabi District)
(Source: Easy Data by Quantec, 2014)

Municipality	2011	2012	2013
Moqhaka Local Municipality	**165 921**	**166 427**	**166 954**
Ngwathe Local Municipality	120 520	120 773	121 024
Metsimaholo Local Municipality	149 423	149 256	149 057
Mafube Local Municipality	54 208	54 326	54 439
Fezile Dabi (District)	**490 072**	**490 782**	**491 474**

Although a fairly accurate indication may be presented of the urban population, data regarding the rural population is mostly unreliable due to various dynamic demographic factors in the region. Pertinent factors influencing demographic data in rural areas, within the Fezile Dabi Region, include:

- Cross provincial boarder Influx generally to the Sasolburg/ Deneysville areas due to the existing mining activities and its close proximity to the industrial areas of Vereeniging and Vanderbijlpark.
- The tendency occurred to a similar extent in the Viljoenskroon area due to its close proximity to the Free State and North West Province gold mines.
- Fluctuation in the labour force occurs periodically due to the nature of the agricultural practices in the region.
- Urbanisation to urban centres increased substantially.
- Land restitution and ownership are contentious issues within the agricultural community and leads to the tendency to rather house farm workers in formal residential areas than on farms.

Table 2A

Population and Households as Percentage of the District & Population Growth

(Source: Census 2011)

	Population 2001	Population 2011	Population % District (2011)	No of Households	Households % District 2011)	Population Growth (%p.a.) 2001 - 2011
Moqhaka	**167 892**	**160 532**	**33**	**45 661**	**31**	**-0.45**
Ngwathe	118 810	120 520	25	37 102	26	0.14
Metsimaholo	115 955	149 108	30	45 757	32	2.51
Mafube	56 637	57 876	12	16 460	11	0.22
Fezile Dabi	**459 294**	**488 036**	**100**	**144 980**	**100**	**0.61**

The area of jurisdiction of the Moqhaka Local Municipality is situated in the southern part of the Fezile Dabi District, the latter comprising a total of 488 036 residents. As a consequence of a growth potential of - 0.45 % the past 10 years, the total residents in the Moqhaka Region is 160 532. The Free State growth potential for the past 10 years was calculated at 0.14 %. The Moqhaka population presents 33 % of the Fezile Dabi District and comprises a total of 45 661 households; 31 % of the households in the district. The general tendency of migration from rural to urban areas is also occurring in the area (82 % urban and 18 % rural), as is the case in the rest of the Free State Province. The majority of the rural population is active within the agricultural sector.

The rural villages of Renovaal, Vierfontein and the vast mining related housing complexes at Vaal Reefs, although included in the above data for the Moqhaka region, comprise a substantial rural population, composed as follows:

Table 2B

Renovaal and Vierfontein Rural Villages & Vaal Reefs Mining Area

(Source: LMV, 2017)

Residential Area	Hostel Units / Temporary Structures	Residential Erven Occupied	Residential Erven Unoccupied	Total Residential Erven	Estimated Population
Vierfontein North (Sectional Title Scheme)	-	96		96	449
Vierfontein South (Approved Township, General Plan SG No 786/1993)	-	182	19	201	600
Renovaal (Approved Township, General Plan SG No 459/1974)	-	37	302	339	120
Vaal Reefs ▪ Hostel Units at Kopanang and Great Noligwa Mine ▪ Temporary Structures	 3 000 180	 -	 -	 -	 9 000 720
TOTAL	**3 180**	**315**	**321**	**636**	**10 889**

4.2 Regional Gender and Age Distribution

In order to establish a scenario of the age structure in the region, the percentages of different age categories were assessed and summarised in Table 3A. A large portion of the population (27 %) is composed of the age category 15 years and younger. This implicates a typical “fertility distribution”. The specific age distribution implicates a future average to high population growth under normal conditions. A fairly low percentage (6.5 %) of the region’s population is composed of the age category 65 years and older. This is typical of a low “mortality distribution”. Both tendencies emphasise that population growth could, under normal conditions, be expected in the region.

A large portion of the population is subsequently composed of the age group 15-64 (66.4 %) that implicates the stronger economic base of the region in comparison to the rest of the Free State and it may be determined that a larger part of the economic independent sector of the provincial population resides in the region. The phenomenon is explained in view of:

- the more developed character of the region,
- by implication more job opportunities and,
- the strategic location of the region in terms of the mining and industrial sectors in adjacent provinces.

Table 3

Age Structure and Sex Ratio

(Source: Census 2011 Municipal fact sheet)

	Age Structure						**Sex Ratio Males Per 100 Females**	
	<15		**15-64**		**65+**			
	2001	**2011**	**2001**	**2011**	**2001**	**2011**	**2001**	**2011**
Moqhaka	28.1	27.0	66.2	66.4	5.7	6.5	99.2	98.1
Ngwathe	30.6	30.1	62.3	62.4	7.1	7.5	90.7	91.0
Metsimaholo	27.7	26.3	68.6	69.3	3.7	4.4	104.4	108.6
Mafube	34.4	31.6	59.7	62.1	5.9	6.3	87.8	92.5
Fezile Dabi	**29.4**	**28.1**	**65.0**	**65.8**	**5.6**	**6.1**	**96.8**	**98.6**

Exact predictions regarding population growth are complicated in view of uncertain migration patterns and the long-term impact of AIDS. It is also important to distinct between traditionally low cost residential and high cost residential areas. Traditional high cost residential areas tend to have a low “fertility distribution” while low cost residential areas in return have a high “fertility distribution”. This phenomenon was generally depicted throughout the region as the low cost residential areas experienced rapid growth in contrast with the high cost residential areas where moderate to slow growth was experienced. It could generally be expected, according to the current status that an increase in the population will occur in both of the concerned communities. Gender distribution in the region is well-balanced as 50 % of the population is male and 50 % female. The tendency subsequently relates to the fairly well balanced gender distribution in the rest of the Free State (male 49.3 % and female 51.7 %) and the rest of South Africa (male 49.1 % and female 51.9 %).

4.3 Local Economic Development

4.3.1 Current Development Initiatives

- The Maokeng precinct comprises a well located CBD - although several proposals were made since its establishment, during 1987, development is yet to take place.
- The precincts of Maokeng, Viljoenskroon and Matlwangtlwang comprise numerous erven in reserve, although not all provided with infrastructure services.
- The Boitumelo Hospital has been declared as regional hospital and is continuously being upgraded.
- Industrial incentives, endorsed by the Council, aim to ensure growth in the industrial area of Kroonstad, although growth is not as rapid as desired.
- Unique light industrial/ commercial opportunities are available adjacent to the N1 (north of Kroonstad) on municipal owned land - development of a formal industrial area in this vicinity is deemed feasible.
- Although the Municipality comprises a coal burning power station, one of only two owned by a Municipality in the Free State, it is not operational.
- A total of nine provincial and national 'jukskei' tournaments are envisaged to take place in Jukskei Park, the national convergence of 'jukskei" in South Africa.
- Revitalisation of the Kroonpark Holiday Resort, as a favoured inland resort, is deemed necessary to enhance its economic vitality.
- Reference is made to the Stokkiesdraai and Wawielpark recreation and holiday resorts adjacent the Vaal River in the Viljoenskroon area that are becoming popular tourist destinations.
- Although the larger segment of the Vredefort Dome Word Heritage Site (VDWHS) is located within the Moqhaka Municipality, full advantage thereof is not taken – it seems as if Parys benefits substantially from the heritage site. The economic advantage the area holds, is yet to be exploited by the Municipality.

4.3.2 Regional Economic Tendencies

The Kroonstad area comprises of a well-balanced economic structure as may well be determined from the Gross Geographic Product and serves as the principal service centre of the Moqhaka region based on several aspects explained below. Although it appears as if the agricultural sector is an important contributor to the GGP, several other sectors contribute considerably to the GGP of the district. In view of certain Government and Parastatal institutions in the district (Correctional Services, National Defence Force, Transnet, etc.), the contributions of these sectors are also substantial. The potential of

industrial development is abundant and developments within the industrial area qualify for regional industrial incentives. Some industrial erven comprise of railway sidings. There are presently 22 large industries and 31 smaller industries in the industrial area of which Premier Milling and Senwes are perhaps the most prominent.

The Vredefort Dome, an associated heritage status, is a fascinating exposure of ancient granites emerging from the thick cover of the later Karoo sediments. The VDWHS is located within the North-West and Free State Provinces and falls under the jurisdiction of the Dr. Kenneth Kaunda District and JB Marks Local Municipalities in the North-West Province and the Fezile Dabi District and Moqhaka and Ngwathe Local Municipalities in the Free State Province. The form of the dome consists of a central cone of granite surrounded by concentric ridges of quartzite belonging to the Witwatersrand System[6]. The potential of the areas regional economic value is yet to be exploited by the Municipality.

The Greater Kroonstad subsequently plays an important role concerning health services in the district. Boitumelo Hospital with the secure care centre has recently been declared as a regional hospital. A similar educational role is fulfilled in the district. Comprising of 26 pre-primary, 20 primary and 7 secondary schools, the Flavius Mareka FET College and branches of the RSA Technicon and Free State Central University of Technology, the prominent role in this regard in a regional context, is emphasised. Sporting facilities of a broad spectrum offers significant prospects in the region; also valued for its recreational and tourism significance in the Fezile Dabi District. The definite contribution of the tourism potential to regional economic development is evident and should not be under estimated. Several other holiday resorts are present in the Viljoenskroon District, specifically adjacent the Vaal River that, together with the increase in the number of game lodges and guest houses on farms, will result in tourism growth.

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[6] 2-billion years ago a meteorite, 10 kilometers in diameter, hit the earth about 100 km southwest of Johannesburg, creating an enormous impact crater. This area, near the town of Vredefort in the Free State, is known as the Vredefort Dome. The meteorite, larger than Table Mountain, caused a thousand-megaton blast of energy. The impact would have vaporised about 70 cubic kilometres of rock - and may have increased the earth's oxygen levels to a degree that made the development of multicellular life possible. The world has about 130 crater structures of possible impact origin. The Vredefort Dome is among the top three, and is the oldest and largest clearly visible meteorite impact site in the world. Vredefort's original impact scar measures 380 km across and consists of three concentric circles of uplifted rock. They were created by the rebound of rock below the impact site when the asteroid hit. Most of these structures have eroded away and are no longer clearly visible. The inner circle, measuring 180 km, is still visible and can be seen in the beautiful range of hills near Parys and Vredefort. It is this area that was named a World Heritage site.

Although coal is no longer mined at Vierfontein, mining opportunities still exist. Areas north of Kroonstad and Viljoenskroon are underlain with rich coal and the gradual exploitation of coalfields in the Sasolburg vicinity will evidently lead to these areas being mined[7]. The Free State Department of Mineral Resources indicated that several prospecting rights have, of late, been granted for the areas located between Kroonstad and Parys. Future mining will necessitate a holistic approach regarding infrastructure provision.

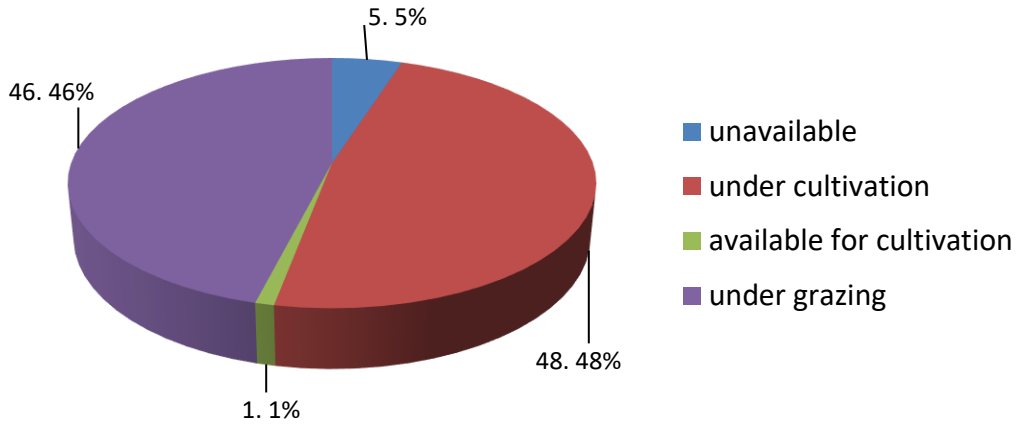
Continuous development and exploitation of the Vaal Reefs gold mines adjacent the Vaal River provides future economic growth potential in the Viljoenskroon area. Currently many of the mineworkers already reside in the Rammulotsi residential area of Viljoenskroon that functions as a satellite town for residential purposes. Diamond deposits are present in the vicinity of Kroonstad and have previously been mined at the Lace and Voorspoed diamond mines; exploitations activities are, however, only foreseen for the medium term.

Viljoenskroon and Steynsrus are located in an area of agricultural significance and mainly provide services to the surrounding rural areas. Industrial development is principally agricultural orientated i.e. the substantial Senwes developments in the Viljoenskroon industrial area. The district accommodates predominantly agricultural related activities. Only a restricted percentage of the region is unavailable for agricultural purposes (5 %). A fairly significant portion of the region (48 %) is currently under cultivation, which is attributed to the average rainfall in the area and the general availability of water for irrigation purposes.

- Future agricultural growth can primarily be created by value-added supplementary agricultural practices (Hydroponics, Tunnels, and Irrigation Schemes etc.).
- The Free State Department of Agriculture, Forestry and Fisheries (during 2009) in "*A Study to Investigate Opportunities for Value Added Agriculture in the Free State Province",* identified the following significant agriculture practises for the Northern Free State district, the most agricultural active region in the province:

[7] The Vereeniging-Sasolburg coalfield ranks third in South Africa in order of importance, while the Free State supplies a saleable output of 10,5 % of the national coal output. (Source: A summarised mineral profile of the Free State Province, CJ Vorster, Council for Geoscience). Two mines are producing, namely the New Vaal Colliery and Sigma Mine, both exploiting bituminous coal.

Figure 5
Average Application of Agricultural Land: Fezile Dabi Region



- Soya Beans (dairy replacement production / products),
- Sunflower (biofuel, oil and secondary products i.e. margarine, mayonnaise etc. such as the currents refinery at Villiers),
- Cattle Farming (primary production in the North-Eastern Free State, feedlots and diversify products),
- Game Farming (venison and biltong products, secondary tourism),
- Limited opportunities for poultry abattoirs (area currently comprises several abattoirs and market deemed saturated),
- Niche Sector: honey production.

- Current restrictions on the alteration of natural veld into cultivated fields should be adhered to.
- Subdivisions to riparian properties must ensure a minimum waterfront of 100 m for subdivisions and the remainder.
- Subdivisions of agricultural land will be considered for formal development of holiday resorts (non-permanent residing) and *Leisure Residential Developments*[8] according to Free State Province, Department of Local Government and Housing, Spatial Planning Directorate's *Development of Rural and Peri-Urban Areas* Guidelines.

[8] LEISURE RESIDENTIAL DWELLINGS – means dwelling houses developed under sectional title or share block scheme mostly in (but not limited to) peri-urban and rural settings of environmental significance, nature conservation area or with vistas on or with access to settings of environmental significance, with or without access to leisure, recreational and sports facilities and features such as golf-courses, hiking trails, river fronts and the like.

- An Agri Park is proposed for the Fezile Dabi District Municipality near Parys. Agri Parks as a concept is new in South Africa, but the idea draws from existing models here and abroad, including educational/experimental farms, collective farming, farmer-incubator projects, agri-clusters, eco-villages, and urban-edge allotments and market gardens. Agri Parks provide networks of contacts between producers, markets and processors, but also provide the physical infrastructure required for the transforming industries[9].

4.3.3 Long Term Economic Prospects

- The agricultural sector of the region, in particular the Viljoenskroon area, is extremely prominent. The latter results in industrial development that is agricultural orientated.
- Future economic growth in the agricultural sector exists, considering small scale processing industries and intensive farming activities where possible.
- Gold is actively mined by *AngloGold Ashanti* in the Vaal Reefs area (refer to Rural SDF Map). Three shafts are currently being mined and the mining operations are considered, by the company, as a long-term mining endeavour.
- The region, similar to the Fezile Dabi District, experienced growth as a weekend tourist destination - specific reference is made to game ranches and guesthouses on farms.
- Supplementary development and effective marketing of the existing tourist destinations have potential for economic growth - reference is made to the Stokkiesdraai and Wawielpark resorts adjacent the Vaal River in the Viljoenskroon area and revitalisation of the Kroonpark resort as a favoured inland destination.

4.3.4 Unemployment and Economic Difficulties

According to the Census 2011 data, the unemployment figure in the Free State is 32.6 %, while the youth unemployment rate is much higher at 43 %. The percentage of the population of the Fezile Dabi Region unemployed, is 33.9 %, while the youth unemployment rate is also higher at 44.4 %.

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[9] Clustering of agricultural enterprises emerged as one of the industry realisations of the economy of agglomeration. It is defined as “a geographically proximate group of interconnected companies and associates institutions in a particular field linked by commonalities and complementarities”. Porter (1998) used the diamond model of competitive advantage to analyse how the concentration of economic activities in the cluster industries can result in new and improved ways to compete and to bring innovation faster to the market. It can be noticed that such spatial clustering is defined by relations not by membership, and the spatial boundaries are as flexible as needed.

Table 4

Labour Market & Dependency Ratio

(Source: Census 2011, Statistics SA)

	Labour Market				Dependency Ratio	
	Unemployment Rate (official)		Youth Unemployment Rate (official) 15-34 years		Per 100 (15-64)	
	2001	2011	2001	2011	2001	2011
Moqhaka	**39.9**	**35.2**	**54.6**	**47.2**	**51.0**	**50.5**
Ngwathe	47.1	35.2	59.4	45.1	60.5	60.2
Metsimaholo	37.0	32.1	47.7	41.6	45.7	44.3
Mafube	45.0	33.4	59.1	44.3	67.5	61.1
Fezile Dabi	**41.3**	**33.9**	**54.2**	**44.4**	**53.8**	**51.9**

The following general tendencies could be derived from the contents of the above table, relating to employment in the region:

- Unemployment remains a critical concern in the area and unemployment figures could generally be considered as high.
- The most recent unemployment statistics for the Moqhaka Region indicates the average unemployment as 35.2 %. The latter is almost equal to the average unemployment for the Fezile Dabi Region of 33.9 %.
- It is evident that only 66.1 % of the population of the region is employed.
- Comparing the different Local Municipalities in the Fezile Dabi Region, it appears that the percentage of the population employed is the lowest for the Ngwathe Region (64.8 %) and the Moqhaka Region (64.8 %) while the Metsimaholo Region has the highest employment figure (67.9 %) followed by the Mafube Region (66.6 %).

5.1 Historic Rural Development

Since its establishment during 1855, **Kroonstad** developed in a typical central town, adequately serving the numerous surrounding smaller communities. Although services are predominantly related to the agriculture sector, a variety of services are rendered to several other sectors. Development of the town since occurred according to a series of strategic development plans. The first document, called the Kroonstad Master Plan, was compiled during 1978 and mainly focussed on the future extension of Maokeng and the provision of a Teachers Training College. Rapid developments, especially in the residential extensions of Maokeng, resulted in the revision of the Master Plan during 1980. The interim period saw extensive development occurring in the larger community. A comprehensive road bypass system was developed and additional land for extension of Maokeng was purchased.

Although the development of both Kroonstad and Maokeng excelled the past few years, the lack of a proper strategic planning document seemed to be a pressing problem. The urgency of proper strategic guidelines became apparent, assessing the rapid growth of **Maokeng**. The latter resulted in preparation of an internal Framework Plan for the development of Maokeng. Residential extensions, and the purchasing of land for future development, specifically followed the broad principles of the Framework Plan. In this regard, it is to be remembered that the two existing communities were seen as autonomous and separate local governments due to the prevailing government policy at that time. A clear structure and framework for development were thus set for Maokeng. It resulted in Maokeng being a modern town with a proper road network and the ample provision of facilities according to modern town planning principles. All the phases of residential extension that followed were done within the framework. Currently, both communities are relatively well developed regarding different land uses. Land uses, where not developed, are however purposefully provided regarding modern urban planning principles. The latter is especially relevant in the case of the Maokeng community.

Brentpark is, at present, a fairly well developed town comprising of proper infrastructure services. Since the town experienced moderate growth during the late eighties, it was decided to compile a Framework Plan for future development. The plan was prepared and approved during 1991. Developments that followed adhered to the broad guidelines of the plan. The Greater Kroonstad recently embarked on the process of compiling a proper Framework Plan to address the future and integrated development of the three involved communities. Commission was given to consultants during 1997 to commence with the plan. It was decided by the Council to continue with the process within the IDP process and complete the document to serve as guideline for all development issues. Although the different development documents served as frameworks for development, a formal and statutory

strategic guideline document was never compiled. The latter may be contributed to the fact that the Integrated Development Planning Process (IDP process) was meanwhile developed.

Viljoenskroon typically developed as a small town since its establishment during 1921, serving the predominant surrounding agricultural community. Development of the town did not occur according to a specific development strategy since no strategic planning documents existed. During 1991, an Urban Structure Plan was compiled for the area. The document provided a framework for development and specifically addressed the development of **Rammulotsi**, the extension of the industrial area and the identification of a suitable refuse dumping site. All the phases of residential extension that followed were done according to modern town planning principles providing a proper road hierarchy and the purposeful distribution of facilities. Although rapid political changes occurred since 1994, a new development plan for the greater community was not compiled. The Integrated Development Planning Process (IDP Process) was meanwhile developed.

In addition to the existing formal urban areas, several residential areas and proclaimed town areas are situated in the Moqhaka Region with reference to Renovaal, Vierfontein and the Vaal Reefs hostel complex and settlement. Small villages (at Great Noligwa, Kopanang and Moab Khotsong Mines) and hostel complexes were developed at Great Noligwa and Kopanang mines, in proximity of Viljoenskroon (adjacent to the Vaal River) although Orkney acts as central place[10] these areas that comprise an approximate 3 000 hostel units with an estimated population of 9 000 residents (refer to Vierfontein under section 10 for more details). **Renovaal** was established during 1974 adjacent the Vaal River with the intention to provide residence in the proximity of the gold mining activities in the North West Province. The town was also later marketed as a leisure residential area with recreation potential at the confluence of the Renoster and Vaal Rivers. **Vierfontein** (referred to as “Vierfontein South”) is also a proclaimed town. The area was initially developed to provide residence for workers at the adjacent mine and electricity power station and was owned by Eskom. After mining activities ceased and the power station discontinued, a township establishment was done to formalize the existing town area during 1993.

Since its establishment, **Steynsrus** also typically developed as a small town serving the predominant surrounding agricultural community. Development of the town did not occur according to a specific development strategy since no strategic planning documents existed. During 1982, a non-statutory Structure Plan was compiled for the area. The document provided a framework for development and specifically addressed the future extensions of the respective residential areas and the possible development of a light industrial area. Development that followed was to a great extent in accordance to

[10] The “Central Place Theory “ was created by the German geographer Walter Christaller, who asserted that settlements simply functioned as 'central places' providing services to surrounding areas.

the Structure Plan. **Matlwangtlwang** experienced moderate growth since 1990. All the phases of residential extension in Matlwangtlwang that followed were done according to modern town planning principles providing a proper road hierarchy and the purposeful distribution of facilities. As adequate provision was made for several facilities, the gradual development thereof should now commence.

Regional development within the study area is confined to mainly the construction of provincial roads and social services regarding education, safety & security and health. The previous IDP process, relating to the former Transitional Rural Councils, was the first attempt to establish some form of regional planning. The current process should thus be seen as the first real incentive to promote regional planning in the post demarcated Local Municipality. Although the National Regional Development Program was launched during 1991, it specifically elucidated that it is an information document and neither an economic strategy nor development plan. The IDP process was developed according to legislation relating to the Development Facilitation Act (Act 67 of 1995) and the Municipal Systems Act (Act 32 of 2000) and aims to address future urban and regional planning and development.

5.2 Growth Points and Growth Potential

Future growth is attributed to the influx and the commercial and agricultural components of the region. Limited growth is envisaged due to long term coal mining opportunities as well as the weekend related tourism potential of the area. Future urbanisation will principally be attributed to natural growth and influx in the area. Although the population growth and housing requirements are predicted in Table 5, influencing factors described and in Section 5.3, although not quantitatively analysed, may influence predications made.

Population growth in the Fezile Dabi District, in general, is lower (0.60 %) in comparison to the estimated annual population growth rate of South Africa (1.34 %)[11]. The predicted population growth in the Moqhaka region is slightly higher (1.85 %) than the average for the District, it is also higher than the calculated national growth. Population growth, in general, and as illustrated in the Figure 6 below, is deemed exceedingly marginal.

- Kroonstad with its strong service character and prominent commercial and industrial components, will remain the main town and growth point of the region and will continue to render various services to the surrounding smaller towns and rural areas.
- Viljoenskroon is located in an area of agricultural significance and mainly provides services in this regard to the surrounding rural areas.

[11] Statistical Release, P0302, Mid-year Population Estimates, 2013

Table 5

Moqhaka Projected Population Growth[12]

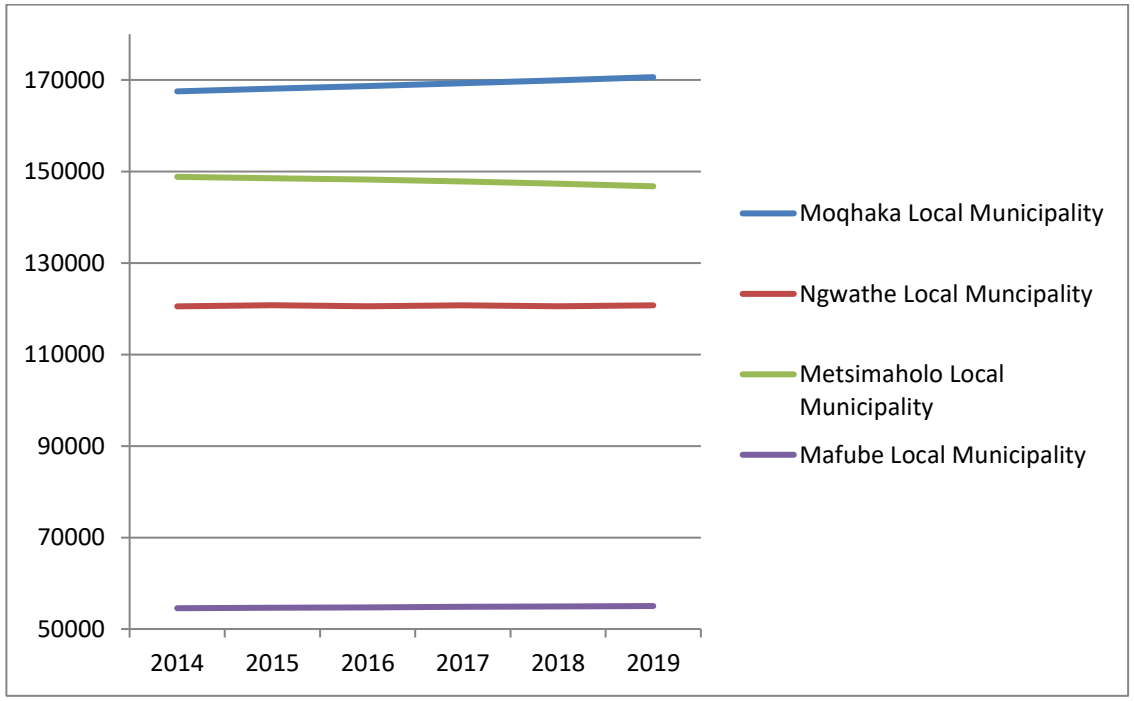
Municipality	2013	2014	2015	2016	2017	2018	2019	Growth 2013 – 2019 (%)
Moqhaka Local Municipality	**166 954**	**167 503**	**168 074**	**168 670**	**169 290**	**169 936**	**170 608**	**1.85**
Ngwathe Local Municipality	121 024	120 520	120 764	120 521	120 759	120 522	120 754	0.99
Metsimaholo Local Municipality	149 057	148 820	148 537	148 201	147 799	147 321	146 752	-1.39
Mafube Local Municipality	54 439	54 547	54 651	54 750	54 845	54 936	55 023	0.87
Fezile Dabi (District)	**491 474**	**491 390**	**492 026.3**	**492 142**	**492 693.4**	**492 715**	**493 137.6**	**0.60**

- Viljoenskroon functions as a satellite town for residential purposes due to its strategic location in the proximity of the Vaal Reefs mines as well as the Orkney / Stilfontein mining areas in the North West Province.
- These towns have the opportunity for future growth based on industrial development, mining and tourism.
- Steynsrus is located in an area of agricultural significance and mainly provides restricted services in this regard to the surrounding rural communities. Substantial future growth of this town is not foreseen.
- Future growth is attributed to the strong commercial and industrial component of the region. Growth is envisaged due to the weekend related tourism potential of the area. Future urbanisation will principally be attributed to farm workers that settle in the urban areas.
- Due to the dominant regional role Kroonstad plays as a regional service provider and industrial and commercial development, the focus of urbanisation will probably be in this area.
- Smaller towns such as Viljoenskroon and Steynsrus primarily accommodate farm workers migrating to these towns.
- Future directions for residential extension, predominantly in the high density low cost residential areas, were identified for all urban areas and indicated on the Spatial Development Framework.

[12] Calculated by using Gompertz-curve analytical method

- These proposed directions for extension of the involved urban areas were discussed in detail and generally relates to the principles of land use development as pertained in the Development Facilitation Act and the National Environmental Management Act.

Figure 6
Moqhaka Projected Population Growth



An assessment of the development potential of urban areas in the Free State Province was endeavoured by the Department of Rural Development and Land Reform during 2014, illustrated in Table 6. It is evident that:

- Kroonstad will remain a growth point in the region as indicated above.

- Viljoenskroon and Steynsrus will continue to serve as small towns with limited economic growth potential focussing on tourism and providing a service to the agricultural community.

A number of regional problems have surfaced over recent decades that have demanded the attention of planners and developers in so far as economic development of small and rural towns, in the broader Free State context, is concerned. The "dying rural town syndrome" seems both the most intractable and the one that continues to capture the public's concern. Development initiatives, at large, do not focus on the plight of the rural Free State, losing population or businesses, not thriving economically and there is widespread evidence that many urban towns are in trouble. These problems include:

- the sudden economic shocks caused by downturns in "urban areas" because of economic restructuring,
- the continued "emptying" of rural areas,
- the ongoing (and increasing) domination of larger urban areas, and
- increasing disparities within and between regions across a wide range of social and economic indicators.

> *Rural Towns play a pivotal role in the economic life of many rural communities. They are an essential part of the economic and planning landscape and need to be acknowledged for their essential role in the local governance landscape. National, Provincial and Local Government as well as the private sector need to further support small town development in order to create vibrant and local economies. Strategic economic and operational infrastructure, market and service delivery interventions, and communication network governance will go a long way in addressing the economic linkages and market bridging roles which small towns play in rural economic life.*
> *Small Towns Development Initiative (STDI), 2010*

5.3 Influencing Factors

The following factors are determined as prominent influences that currently impact or will, in future, impact on development of the region:

- **Road Infrastructure:** An effective primary road network exists in the study area. The secondary road network provided effective access to the above primary road network. Maintenance of the networks is, however, a matter of pertinent concern.

- **Strategic location:** The study area is situated strategically in close proximity to the Gauteng and North West Provinces. The N1, stretching though Kroonstad ought to be optimally utilised in providing a light industrial commercial related development adjacent thereto.
- **Tourism Potential:** The study area has a significant weekend related tourism potential that could, in future, contribute to the GGP of the district and should be further exploited. Revitalisation of the Kroonpark resort is deemed imperative to, amongst other, further enhance the tourism potential of the region.

Table 6

Summary of Economic - and Urban Growth Potential in Moqhaka

(Source Department Rural Development & Land Reform, 2014)

Towns	Moqhaka Economic - And Urban Growth Potential			
	Economic Potential of Towns	Economic Potential of the Local Municipality	Urban Growth Potential of Towns	Urban Growth Potential of the Local Municipality
Kroonstad	High	High	High	Medium
Viljoenskroon	Medium		Medium	
Steynsrus	Very Low		Very Low	
Vierfontein	High		Low	

- **Agricultural Sector:** The agricultural sector of certain areas in the district is extremely prominent and contributes largely to the GGP of the Fezile Dabi District that emphasises the agricultural significance of this district. The latter results to industrial development that is largely agricultural orientated.
- **AIDS:** The impact of AIDS on economic growth patterns is still largely an unknown entity. An increase in mortality will, however, place a large burden on health services and the cost thereof that will influence future economic growth. The estimated overall HIV prevalence rate in South Africa is approximately 10 %. The total number of people living with HIV was estimated at approximately 5.26 million in 2013. For adults aged 15–49 years, an estimated 15.9 % of the population is HIV positive[13].

[13] Statistical Release, P0302, Mid-year Population Estimates, 2013

- **Competition:** The impact of international trade and competition in agricultural products might result in an agricultural sector that is internationally less competitive. The latter implies a negative effect on economic growth leading to a possible loss in employment and further depopulation of the rural area.
- **Pollution:** Impact of pollution on the Vaal River through high-density development is significant. Negligence of bulk sewer networks in all urban areas are having a detrimental impact on freshwater systems in the region of which the Vals and Renoster Rivers (attributes to the Vaal River) and the pan system in the vicinity of Viljoenskroon, are the most significant.
- **Influx:** Influx of residents form neighbouring metropolitan areas (Gauteng and Vanderbijlpark and Vereeniging) is deemed a critical influencing factor. The continuous influx of migrant workers, using the towns of Sasolburg, Parys and Deneysville (Parys and Heilbron to a lesser extent) as satellite or "sleep towns" is a burden on the delivery of housing in the Fezile Dabi District. Migration therefore is an important demographic process in shaping the age structure and distribution of the provincial population.

5.4 Moqhaka Rural SDF

A: CORE

Vredefort Dome World Heritage Site

Two billion years ago a meteorite 10 kilometres in diameter hit the earth about 100 km southwest of Johannesburg, creating an enormous impact crater. This area, near the town of Vredefort in the Free State, is known as the Vredefort Dome. The meteorite, larger than Table Mountain, caused a thousand-megaton blast of energy. The impact would have vaporised about 70 cubic kilometres of rock - and may have increased the earth's oxygen levels to a degree that made the development of multicellular life possible. The world has about 130 crater structures of possible impact origin. The Vredefort Dome is among the top three, and is the oldest and largest clearly visible meteorite impact site in the world. Vredefort's original impact scar measures 380 km across and consists of three concentric circles of uplifted rock. They were created by the rebound of rock below the impact site when the asteroid hit. Most of these structures have eroded away and are no longer clearly visible. The inner circle, measuring 180 km, is still visible and can be seen in the beautiful range of hills near Parys and Vredefort. An interpretation centre was recently established on the outskirts of Vredefort on route to Parys.

As the Vredefort Dome is a significant topographical feature of international significance it was proclaimed as a World Heritage Site (see Annexure 1). The VDWHS and associated buffer areas are located close to Parys. Due to the demarcated municipal boundaries (between Ngwathe and the Moqhaka

Municipality) only 3 properties of the Dome and its associated buffers (located on the Free State side), are located in the Ngwathe Municipality – the remaining properties are located in the Moqhaka Municipality and a significant portion in the North West Province. The Moqhaka SDF does not attempt to also prepare a SDF for the VDWHS, as it is deemed a unique planning exercise to be endeavoured by several specialists. Although several efforts to prepare appropriate development guidelines for the VDWHS, were endeavoured in the past, all were unsuccessful and not approved by roleplaying authorities. It is foreseen that a regional SDF will, in due course, be attempted. This SDF, however, identified the following development goal for the VDWHS, aligned with the recently prepared VDWHS EMF:

To promote the optimal development and utilisation of the unique tourism potential of the Moqhaka region, whilst not compromising the outstanding universal value of the adjacent VDWHS and unduly impairing the safe, undisturbed and quiet enjoyment of the area.

STATUS QUO	FUTURE DEVELOPMENT FRAMEWORK
Vredefort Dome World Heritage Site The Vredefort Dome is a prominent topographical feature of international significance and was recently proclaimed as a World Heritage Site. The site is largely situated in the region with portions thereof situated in the Parys and Vredefort Districts and a significant portion in the North West Province. On the Free State side, the larger part of the Vredefort Dome is situated in the Moqhaka Local Municipality area and an exceedingly small portion in the Ngwathe Local Municipality area (see Annexure 1: Vredefort Dome World Heritage Site Draft Map). **Vlei and "Pan Veld" areas:** A prominent vlei system (Olifantsvlei) drains through the study area. This marsh area is a sensitive ecological system and should be accommodated in an open space system. The Witpan pan and a system of other small pans	▪ A Management Area has been established (as integral part of the Integrated Town Planning Scheme prepared for the Moqhaka Local Municipality) and special development guidelines are in the process of being prepared for the area. ▪ Establishment of the Management Authority by the MEC is also foreseen in the near future. ▪ Conservation of the plant biome in the Vredefort Dome, referred to as the *Banke Veld* and unique to the province, should be considered important.

STATUS QUO	FUTURE DEVELOPMENT FRAMEWORK
are situated in the region, which form part of the prominent *"pan veldt"* of the western Free State. It has been identified as a sensitive ecological system that has been polluted and contaminated to a large extent as a result of the nearby urban development.	▪ The Olifantsvlei and associated "pan-veldt" areas should unquestionably be accommodated in an open space system to secure effective conservation of this sensitive ecological system.

B: BUFFER	
STATUS QUO	FUTURE SPATIAL FRAMEWORK
Kroonstad Region	
The Vals River, its tributaries and wetland areas of significance, drain from east to west through urban area. Several dams (mainly as raw water sources are constructed in the Vals River and adjacent thereto (Bloemhoek Dam). The riparian to these areas are deemed of extreme environmental significance and controlled development and limiting pollution thereof, are considered as substantial priorities.	▪ The Vals River, its tributaries, constructed dams and associated riparian areas thereto, are paramount natural resources and should be protected to minimise pollution thereof. ▪ The areas within 32 m and 100 m of water courses, as defined in the National Water Act, and within 500 m of wetlands are regarded as sensitive and development in these areas will not be permitted. ▪ **S15**: the implementation of appropriate development control at the Serfontein Dam water ski resort, amongst other allowing for access to the general public, must timely be addressed. ▪ **S 7, 9, 11, 14, 15, 16:** Proper management of the riparian must be implemented to intercept misuse and pollution of the area, being a principal source of raw water to the urban area. ▪ **G8:** Two illegal sand winning mining terrains subsequently exist on the Vals River riparian where sand was mined without the necessary permits and need to be rehabilitated as a matter of urgency; especially in view of the unsafe nature of the sites.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
Viljoenskroon Region	
Several significant water courses are present in the area, of which the Vaal and Renoster Rivers, Olifantsvlei and Witpan (S5 & S6) areas are present in the area. The riparian to these areas are deemed of extreme environmental significance and controlled development and limiting pollution thereof, are considered as substantial priorities	▪ The Renoster and Vaal River, its tributaries, constructed dams and associated riparian areas thereto, are paramount natural resources and should be protected to minimise pollution thereof. ▪ The areas within 32 m and 100 m of water courses, as defined in the National Water Act, and within 500 m of wetlands are regarded as sensitive and development in these areas will not be permitted.
Steynsrus Region	
The water course of "Jas se Spruit" and other small vlei areas, traverse through the urban area. The riparian to these areas are deemed of extreme environmental significance and controlled development and limiting pollution thereof, are considered as substantial priorities A sensitive spruit and vlei system, generally known as "Jas se Spruit" extends through the urban area and needs to be incorporated in an open space system, not considered for further development.	▪ The Vals River and Jas se Spruit, its tributaries, constructed dams and associated riparian areas thereto, are paramount natural resources and should be protected to minimise pollution thereof. ▪ The areas within 32 m and 100 m of water courses, as defined in the National Water Act, and within 500 m of wetlands are regarded as sensitive and development in these areas will not be permitted. ▪ **S4:** Riparian areas adjacent to "Jas se Spruit" need to be incorporated in an open space system, not considered for further development. - Activities such as urban agriculture and sport fields may be considered should they not impact on specific identified sensitive areas. - Proper management of the riparian must be implemented to intercept misuse and pollution of the area

C: AGRICULTURAL AREAS

The ensuing table summarises the agricultural potential of the Moqhaka Region. A mere 1 % (1 039 ha) of the region's surface area is available for cultivation purposes and 3 % (29 081 ha), unavailable for agricultural purposes.

Table 7A

Application of Agricultural Land: Moqhaka Region

(Source: Department of Agriculture)

	Kroonstad District		Viljoenskroon District		Lindley District		Total Area	
	ha	%	ha	%	ha	%	ha	%
Area unavailable for Agriculture	12 742	3	10 227	5	6 112	2	29 081	3
Area presently under cultivation	191 789	46	148 698	71	112 123	40	452 610	50
Area available for cultivation	689	1	350	1	0	0	1 039	1
Area presently under grazing	210 980	50	49 225	23	165 065	58	425 270	46
DISTRICT TOTAL AREA	**416 200**	**46**	**208 500**	**23**	**283 300**	**31**	**908 000**	**100**

STATUS QUO	FUTURE DEVELOPMENT FRAMEWORK
Virtually, the larger part of the region that is suitable for cultivation is being utilised (48 %) and only 1 % remains for cultivation purposes. Stock farming (46 %) is mainly extensive, focussing on grazing and dairy farming. It may well generally be derived that the region is developed to its optimum with regard to extensive agriculture and cultivation and that future development of this component of the agricultural sector is unlikely. Current housing needs and the provision of housing in the urban areas are illustrated in Table 8. The continuous expansion and growth of urban	Only 1 % of the study area is not optimally utilised for cultivation or grazing that provides future potential for agricultural purposes. Future agricultural growth must primarily be created by value-added supplementary agricultural practices including: [14] ▪ Soya Beans (dairy replacement production / products), ▪ Sunflower (biofuel, oil and secondary products i.e. margarine, mayonnaise etc. such as the currents refinery at Villiers), ▪ Cattle Farming (primary production in the north-eastern Free State, feedlots and diversify products), ▪ Game Farming (venison and biltong products, secondary tourism),

[14] "A Study to Investigate Opportunities for Value Add Agriculture in the Free State Province" (The Free State Department of Agriculture, Forestry and Fisheries, 2009)

STATUS QUO	FUTURE DEVELOPMENT FRAMEWORK
areas imply that additional land will have to be acquired, mostly related to the future expansion of the Rammulotsi precinct. A summary of the short term land requirement is provided in Table 8. Although commonage lands were obtained by the Municipality the past 20 years, it seems not to provide in the community's needs and acceleration of the process is anticipated. Small-scale farming is relatively latent (exclusively in the Kroonstad surroundings). **Rural Non Agriculture Related Developments** Several subdivisions of agricultural land, especially adjacent the Vaal River (also the small rural village of Renovaal) to provide for tourism and recreational purposes, occurred the past few years. Subdivisions ensured a minimum waterfront of 100 m for all subdivisions and the remainder. A limited number of these subdivisions are developed.	▪ Limited opportunities for poultry abattoirs (area currently comprises several abattoirs and market deemed saturated), ▪ Niche Sector: honey production. Obtaining land for commonage purposes remains a priority in the region. Several smaller farming units and small holdings are proposed for inclusion within the Urban Fringe to limit the misuse thereof and allow for appropriate land use control measures. Incessant development in the region should preferably be preceded by a Management Plan. In this respect, the continuous needs of the high income market should not be overlooked.

A continuous need is experienced in the community for additional commonage land and appropriate land parcels must timely be identified and purchased to address this specific community need. Land for the purposes of commonage was obtained for all the urban areas involved. Gradual urban encroachment occurred, in some areas, on commonage land (illustrated in Table 7B). The phenomenon is due to the commonage land, in most instances, being located on the immediate hinterland of particular urban areas. As a consequence, additional land has to be timely obtained. Table 7B further indicates the urban areas where land needs to be acquired for anticipated urban extension and commonage land.

Table 7B

Agricultural Land to be Included within the Urban Fringe

(Source: Moqhaka Municipality, 2017)

Urban Area	**Land to incorporated within the Urban Fringe and excluded from agriculture land**[15]
Kroonstad Area: ▪ The Farm Bloemspruit 975 ▪ The Farm Marksman 1024 ▪ The Farm Retreat 1770 ▪ The Farm Florida 868 ▪ The Farm Morris Rest 642 ▪ Subdivision 1 and Remainder of the Farm The Rest 1193 ▪ Subdivision 1 and Remainder of the Farm Bethel 657 ▪ The Farm Inverness 1628 ▪ The Farm Excelsior 1172 ▪ The Farm Mazelbroch 1578 ▪ Subdivision 1 and Remainder of the Farm Waterloo 1315 ▪ The Farm Versailles 1632 ▪ Subdivision 1 to 5 and Remainder of the Farm La Porte Vase 77 ▪ The Farm Beverley 1894 ▪ The Farm Lahai-Roi 2126 ▪ The Farm Stylte 2222 ▪ Subdivision 1 and Remainder of the Farm Turin 1912 ▪ Subdivision 1 and Remainder of the Farm Petrus Heuvel 1862	▪ Subdivision 1 and Remainder of the Farm De Kroon 406 ▪ Subdivision 1 and Remainder of the Farm The Peak 2127 ▪ The Farm Buitenzorg 1901 ▪ The Farm Skibo 504 ▪ Subdivision 1 and Remainder of the Farm Buitenzorg 930 ▪ The Farm Berrie's Rust 1304 ▪ The Farm Jordaans Hoek 339 ▪ The Farm Boville 373 ▪ The Farm Geluk 986 ▪ Subdivision 1 and the Remainder of the Farm The Rapids 1950 ▪ The Farm East Mead 2323 ▪ The Farm De Hoop 2276 ▪ The Farm Welverdiend 2275 ▪ Subdivision 1 of the Farm Meadowsweet 1616 ▪ Subdivision 1 to 3 and Remainder of the Farm Bloemhoek 1212 ▪ The Farm Ricardum 215 ▪ The Farm The Knoll 1782 ▪ The Farm Berries Rust 340 ▪ Subdivision 1 to 6 of the Farm Buitenzorg 553

[15] Land parcels indicated are earmarked for inclusion within the Urban Fringe pertaining to this SDF and the LUS to ensure management thereof by the Municipality, according to land use control measures, also pertaining to the LUS. Exclusion of these land parcels from agricultural land is therefore evident.

Urban Area	**Land to incorporated within the Urban Fringe and excluded from agriculture land**[15]
▪ Remainder of the Farm De Kroon 406 ▪ Subdivision 2 to 5 and Remainder of the Farm Lusthof 707 ▪ Subdivision 1 of the Farm Half-Kroonsdrift 827 ▪ Remainder of the Farm Traffic 2162 ▪ Remainder of the Farm Ballast Gat 964 ▪ The Farm Steenwerp 1840	▪ The Farm Driehoek 1593 ▪ Subdivision 1 and Remainder of the Farm The Rest 1193 ▪ Remainder of the Farm Lusthof 707 ▪ The Farm Steenwerp 2150
Viljoenskroon Area: ▪ Subdivision 1 of Biesievlei 497 (F1) ▪ Joffrea 461 ▪ Marne 421 ▪ Subdivision 1, 2 & 3 and the Remainder of the Farm Vlakvlei 417, ▪ Helpmekaar 543 ▪ Subdivision 2 of the Farm Helpmekaar 376 ▪ Zaailand 336 ▪ Almansdam 406 ▪ Goedehoop 355 ▪ Subdivision 4 of the Farm Rendezvous 398 ▪ The Remainder and Subdivision 2 of the Farm Eindelik 529 ▪ Subdivisions 1, 4 & 10 of the Farm Krigsvlei 80	Several smaller properties in the vicinity of the Viljoenskroon station and industrial area: ▪ Panbit 575 ▪ Subdivision 1 & 2 of the Farm Panbit 485 ▪ Subdivision 1 & 4 of the Farm Konningsdal 395 ▪ Subdivision 3 of the Farm Ethelsdale 405 ▪ Subdivision 1 of the Farm Huntersvley 401
Steynsrus Area: ▪ The Farm Bloemhof 1011 ▪ Subdivision 6 of the Farm Benoni 662 ▪ Subdivision 1 and Remainder of the Farm Steynsrust Siding 810 ▪ The Farm Saamwerk 989 ▪ The Farm Jaskraal 91	▪ Subdivision 1 and Remainder of the Farm Steynsrust Creamery 1010 ▪ Subdivision 1 to 5 and Remainder of the Farm Op De Tijd 382 ▪ The Farm Ruhr 873 ▪ The Farm Otawi 855

D: URBAN RELATED
Housing The rural area comprises 2 332 farms (excluding the subdivisions of agricultural land adjacent the Vaal River). A substantial migration occurred the past few years from the rural to the urban areas. Current housing needs and the provision of housing in the urban areas are illustrated in Table 8. The continuous expansion and growth of urban areas imply that additional land will have to be acquired for the Rammulotsi precinct, as indicated in the Table 7B. The Kroonstad and Steynsrus areas comprise adequate hinterlands for future extensions. Urban extension is neither promoted nor foreseen in the rural villages of Renovaal and Vierfontein and residential complexes at Vaal Reefs. **Villages** Several rural villages (Vaal Reefs area) dispersed through the Municipality's area of jurisdiction must be incorporated under the Moqhaka Land Use and effective land use control, implemented. These villages play a significant role in the area since they house a large number of the specialised labour component relating to mining in the area. Gold is actively mined by *Anglo Gold Ashanti* at the Vaal Reefs. Three shafts are currently being mined and the mining operations are considered, by the company, as a long-term enterprise. The shafts are known as: ▪ Great Noligwa Mine ▪ Kopanang Mine ▪ Moab Khotsong Mine Existing mining activities are undertaken on a vast area, comprising of 5 489 ha of which approximately 2 600 ha are, at present vacant. Three mines are operational and the mining terrains include plants, storage, residences, dumps, workshops and the like. Hostel complexes were developed at Great Noligwa and Kopanang mines and comprises an approximate 3 000 hostel units with an estimated population of 9 000 residents. ▪ Gold will be mined for the long-term at Vaal Reefs - land use control in these areas is imposed in terms of the Land Use Scheme under the zoning "Mine and Mining Activities". ▪ Future development of vacant land for residential purposes is, however, not envisaged by the concerned mining company. ▪ Current informal settlements at the mining terrains need to be promptly addressed and resolved with the mining company to prevent disorderly settlement.

Table 8

Summary of Housing Needs in Moqhaka per Urban Area

(Source Municipality, 2017)

Residential Area	Erven			Erf & Land Requirements (Determined By Council)
	Residential Erven Occupied	Residential Erven Unoccupied	Total Residential Erven	
Kroonstad	3 890	941	4 831	-
Maokeng	16 166	4 969	21 135	-
Marabastad	1 284		1 284	-
Brentpark	883	314	1 197	-
SUBTOTAL	**22 223**	**6 224**	**28 447**	**-**
Viljoenskroon	608	103	711	-
Rammulotsi	5 582		5 582	1 500
Northleigh Phase 1 & 2	4 001		4 001	
Northleigh Phase 3		1 022	1 022	
SUBTOTAL	**10 191**	**1 125**	**11 316**	**1 500**
Steynsrus	228	120	348	-
Matlwangtlwang New Extensions	1 671	1 391	3 062	
SUBTOTAL	**1 899**	**1 511**	**3 410**	
Vierfontein North (Sectional Title Scheme)	96		96	**-**
Vierfontein South (Approved Township, General Plan SG No 786/1993)	182	19	201	**-**
Renovaal (Approved Township, General Plan SG No 459/1974)	37	302	339	**-**
Vaal Reefs Hostel Units Temporary Structures	-	-	-	**-**
SUBTOTAL	**315**	**321**	**636**	**-**
Total	**34 628**	**9 181**	**43 809**	**1 500**

Resorts and Tourism

The area is not considered as a primary tourist destination, although it is increasingly becoming a favourite weekend destination. The hunting and guesthouse industries displayed an exceedingly rapid growth the past few years. Recreation areas and facilities are predominantly confined to the urban areas. The Kroonpark, Jukskeipark and Serfontein Dam water-ski (to a lesser extent) recreation and holiday resorts in Kroonstad attract interest throughout the region. Stokkiesdraai and Wawielpark recreation and holiday resorts adjacent the Vaal River in the Viljoenskroon area are increasingly becoming popular tourist destinations.

Vaal River

Due to the significant role of the Vaal River fulfils in the region, in providing potable water, everything possible must be done to restrict the pollution of these sources to the minimum. With this in view it is considered undesirable that large increase in the population concentration takes place in riparian areas. Riparian areas must be protected against injudicious use on account of their ecological aesthetic or recreational value taking amongst other, cognisance of:

- *Leisure Residential and Resort Developments* according to Free State Province, Department of COGTA's *Development of Rural and Peri-Urban Areas* Guidelines (2006),
- The Free State Province Biodiversity Plan (2015),
- Implementation of the Strategic Objectives and Management Zones of the Vredefort Dome World Heritage Site EMF and the Moqhaka EMF [16],
- All development application have to be assessed in terms of the management zones proposed in the Vredefort Dome World Heritage Site EMF and the Moqhaka EMF.

Tourism only contributed 3.1 % to the GDP of the district in 2010. The industry needs to grow to levels as experienced in the province that has a contribution of 5.9 % of GDP. Tourism in the district has been growing steadily at 3.4 % per annum. As could be expected, the Ngwathe area has the highest levels of tourism at 9.7 % of GDP, while the Metsimaholo area has only a 1.7 % contribution to GDP. There is a potential for growth in the tourism sector and needs to be exploited, especially in terms of the domestic market (Fezile Dabi District Municipality LED Report, 2013).

[16] **VDWHS Environmental Management Framework & Moqhaka Environmental Management Framework 2013** (Source: Department of Environmental Affairs). The VDWHS is located within the North-West and Free State Provinces and falls under the jurisdiction of the Dr. Kenneth Kaunda District and JB Marks Local Municipalities in the North-West Province and the Fezile Dabi District and Moqhaka and Ngwathe Local Municipalities in the Free State Province.

Heritage Considerations

The Free State Province played a significant role in the Anglo Boer War, resulting in a number of historically important tourist attractions. The Koppies area, for example, is becoming well known for various battlefields as tourist attractions. These tourist attractions of historical importance include amongst other:

- The R82 Battlefield Route from Kroonstad to Greenlands, including the Rooiwal Battlefield, has been officially established,
- Kroonstad Concentration Camp Cemetery, and
- Sarel Cillier's Farm.
- Also significant is the Reverent Mahabane House located in Marabastad (Kroonstad), being a National Heritage Site. Conservation of the area below Strydom Dam is additionally evident as archaeological findings (artefacts) are present at this location.

All known heritage sites in the Moqhaka Region should be documented and listed in a Municipal Heritage Register for submission to the Provincial Heritage Resources Authorities. This is a listing of the heritage resources in the Moqhaka Municipality which are considered to be conservation-worthy in terms of the heritage assessment criteria set out in Section 3(3) of the National Heritage Resources Act (Act 25 of 1999).

Rural Education

The provision of school buildings in **rural areas** is primarily facilitated by the Education Act (Act 84 of 1996). The Free State Department of Education prescribes that a rural school should service a radius of not larger than 10 km. Schools are not provided on a spatial basis only, but also on a density base. More than 1 school per 10 km radius may thus be provided should the density of pupils justify the provision. Farm schools are further unique since they represent public schools on private land.

The Education Department will assess private schools and take account of their capacity when new schools are to be provided. The Department naturally monitors school standards of these institutions. In order to provide reasonable facilities to schools, the Department adopted a policy of so called "Green Patches". The green patch concept refers to a larger school that is provided with facilities such as telephones, faxes, copiers, et cetera, which will serve smaller surrounding schools.

- Farm schools; especially primary schools, are spatially well-distributed in the region. Present data shows that there are a total of 226 schools in the rural area of the Fezile Dabi Region.

- The Department of Education indicated that in the Free State in general, the number of pupils in the rural area has decreased considerably with approximately 43 % since 1996. This is primarily attributed to urbanisation to urban centres, the tendency of farm workers to settle in urban areas in order to be in closer proximity of facilities and services.
- Considering the above, it may be expected that the number of pupils per teacher could further decrease with the result of an even more favourable teacher/ pupil ratio in the rural areas.

Rural Health Services

There is one **district hospital**, Boitumelo Hospital, provided for the entire Fezile Dabi district that is situated in Kroonstad and provides simultaneously in regional and district hospital services. In the Ngwathe Region, two hospitals exist that are situated in Heilbron and Parys. Rural health provision, similar to the national tendency, is still an issue of concern in the region. Health services are normally provided on a monthly basis in the region through **Mobile Clinics.** The service needs to be enhanced in the entire region as there are shortcomings in rural health services.

Environmental Health

Environmental Health is a District Municipality function co-ordinated from the Sasolburg Head Office. Although Environmental Health is managed and co-ordinated from Sasolburg, Environmental Health Officers are spread out geographically to render services in all the towns in the District. Environmental Health deals mainly with ensuring a safe and healthy environment in the whole district (both urban and rural areas). The Environmental Health department focuses on the provision of municipal health services as defined in the National Health Act, 2003 (Act 61 of 2003). Control over the sustainable delivery and maintenance of infrastructure services for all rural developments is also the responsibility of the Department. In this regard, high density and other developments adjacent the Vaal River that is becoming more popular, need to adhere to specific health standards set by the Department.

E: INDUSTRIAL AREAS

Industrial Areas

Kroonstad

The heavy industrial area, *Industria* and light and noxious industrial area *Kroondustria* are situated to the north west of Kroonstad. A serious concern is the fact that the main access to the industrial area, from the major road network, is through the Kroonstad CBD resulting in dilapidated road surfaces in the CBD. The Gunhill industrial area is situated north of the Suidrand neighbourhood and is mainly utilised as a petroleum substance depot. Concerns

Industrial Areas
have been raised that fuel tankers, piling up in an event to be refuelled, present a pertinent risk and are also conducive to the current dilapidated road surfaces in the area. **Viljoenskroon** The urban area is located in an extremely prominent agricultural region and industrial activities are mostly indicative hereof. A well established and developed, accessible heavy and noxious industrial area is located on the western extremes of the urban area, comprising extension possibilities. A well-developed light industrial area is situated to the west of Viljoenskroon (I4). As outlined, industrial development is consequently exclusively agricultural orientated. Senwes established a production plant in the industrial area, operating on a national base, producing fodder and pet food. **Steynsrus** No formal industrial area or sites are provided in Steynsrus due to the fact that there is no large-scale industrial development at present. A limited number of service industries, of which the Salem Pottery (although activities have largely been downscaled) is the most significant, exist in the CBD.
Extractive Industries (Mining)
Regional mining activities are restricted to the following**:** ▪ Gravel obtained from several open cast pits for construction or road building purposes, ▪ Sand winning along the Vals River, ▪ Alluvial diamonds are exploited, in isolated locations of the Vaal River riparian, ▪ Volcanic pipes are mined in the region at Voorspoed (De Beers)[17] and Lace Mines (Private), ▪ Future exploitation of rich coal deposits between Kroonstad and Koppies is the foreseeable future is highly likely, ▪ Rich gold deposits northwest of Viljoenskroon, ▪ Small villages (at Great Noligwa, Kopanang and Moab Khotsong Mines) and hostel complexes were developed at Great Noligwa and Kopanang mines, in proximity of Viljoenskroon (adjacent to the Vaal River) although Orkney acts as central place (See Section 10 for more details).

[17] Closure of the mine is, however, imminent, future exploitation remains uncertain.

F: SURFACE INFRASTRUCTURE & BUILDINGS

Airfields

National air freight hub and dry harbour facility (Kroonstad Airfield)

- The Kroonstad airfield is well-located for upgrading to a national air freight hub and dry harbour facility. Its location is ideal in close proximity, and with a direct access to the N1 National Road.
- Although the airfield presently supports the agricultural orientated activities and industries of the region, the potential thereof as a national air freight hub should not be disregarded.
- However, if maintenance of the airfield is not addressed as a matter of urgency, exceedingly valuable infrastructure will become dilapidated and the risk ascends forfeiting licensing as a Civil Aviation facility.
- The remaining urban areas do not comprise airfields.

Railway Lines and Stations

- The significance of a proper road network is emphasised by the fact that most railway stations in the region are not in operation and road transportation is the only means of transporting agricultural products.
- None of the existing stations have been identified to be operational in future.
- The more optimal utilisation of the railway service as a commuting service in the region, must be considered a priority.

Kroonstad

The main Bloemfontein/ Gauteng railway line stretches through the region and plays a significant role in linking the mining industries of Kroonstad and Sasolburg with Gauteng and Bloemfontein. The railway line additionally transports most of the agricultural products, especially maize, from the area. The most recent modal split, however, suggested that freight is predominantly transported via road. Several silos (and smaller stations with silos) are established in the region, most of the stations were since decommissioned. The historic station building in Kroonstad is no longer in use and in an exceedingly derelict condition.

Vierfontein

The railway line linking Kroonstad with Klerksdorp in the North West Province has been closed and now only reaches as far as Vierfontein.

Railway Lines and Stations
Viljoenskroon The industrial area of Viljoenskroon and the Steynsrus urban area are serviced by the main Potchefstroom / Klerksdorp and Bethlehem railway line, stretching through the region and playing a significant role in linking the North West Province via Kroonstad to Bethlehem and further east to KwaZulu-Natal. The former link from Viljoenskroon to Klerksdorp, no longer exists. A railway line, adjacent the industrial area, links Viljoenskroon with Vierfontein. This railway line links to the main railway line between the Gauteng and Cape Provinces to the north of Kroonstad at the Westleigh station. The Viljoenskroon station is situated to the west, adjacent the industrial area. The railway line is predominantly utilised for the transportation of agricultural products, especially maize from the district and to a lesser extent goods produced by the concerned industries. Although provision was made for railway sidings to many industrial sites, only the Senwes, Allem Brothers, Omnia, Zennex and Vrystaat Mielies industries are linked to the railway line via a siding. Due to the cost related hereto and the more prominent role of road transportation, the extension of sidings is not foreseen. The Viljoenskroon station is operational but at a considerably lower frequency than in the past. **Steynsrus** The main railway line between Bethlehem and Kroonstad delineates the urban area's northern extremes. The Steynsrus station is not utilised in view of it being appallingly vandalised.

Regional Infrastructure Service Provision

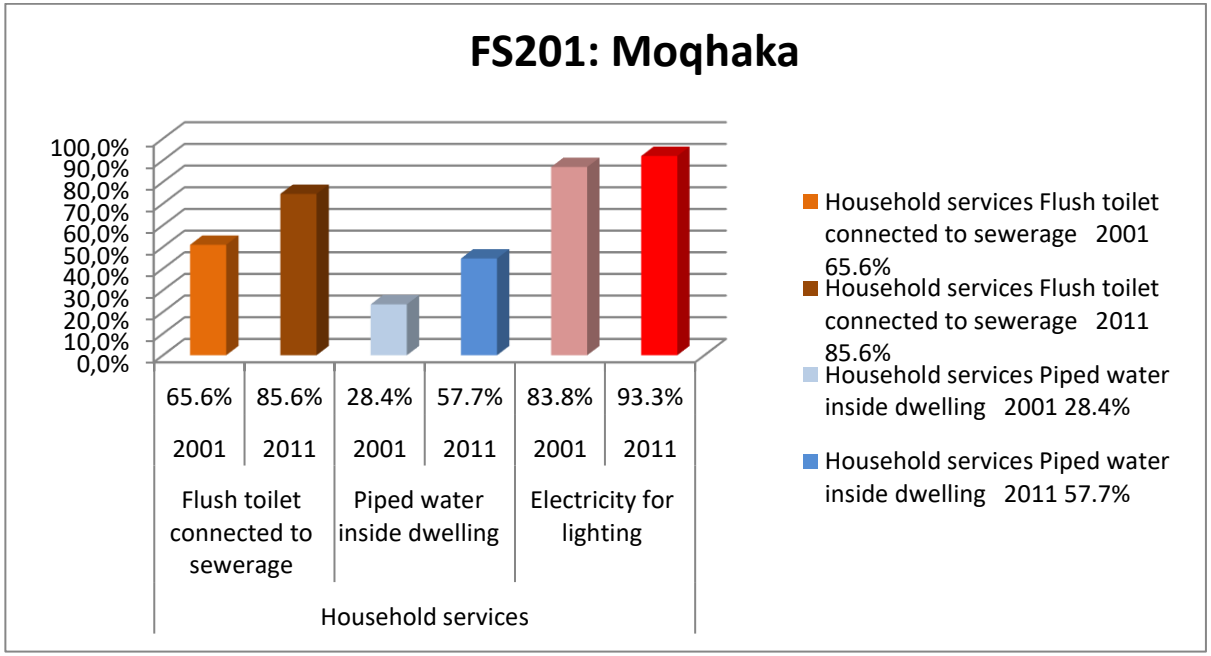
Figure 7 illustrates that gradual improvement in service delivery occurred the past 10 years. The specific level of services addressed is, however, a high level of service provision. As RDP standards are much lower, it follows that higher levels of services provision have since been obtained, especially in so far as the eradication of backlogs is concerned.

In the Fezile Dabi District Municipality (FDDM) 78.2 % of households comprise a flush toilet, connected to sewerage. Moqhaka Local Municipally has higher provision levels (85.6 %), followed by Mafube where 77.7 % comprise a flush toilet, connected to sewerage. In the Ngwathe and Metsimaholo Municipality, 74.5 % and 74 % of households comprise a flush toilet, connected to sewerage, respectively.

In the Fezile Dabi District Municipality (FDDM) 56.7 % of households receive piped water inside dwellings. Metsimaholo Local Municipally has higher provision levels (71.7 %), followed by the Moqhaka and Ngwathe Local Municipalities where 57.7 % and 44.7 % of households receive piped water inside dwellings, respectively. In the Mafube Municipality 39.8 % of households receive piped water inside dwellings.

In the Fezile Dabi District Municipality (FDDM) 89.8 % of households have access to electricity for lighting. Moqhaka Local Municipally has higher provision levels (93.3 %), followed by the Ngwathe Municipality where 92 % of households have access to electricity for lighting. In the Metsimaholo and Mafube Municipality, 86.4 % and 84.4 % of households have access to electricity for lighting.

Figure 7
Moqhaka Regional Perspective: Level of Service Provision
(Source: Census 2011)



Bulk Service Provision

Kroonstad	**Viljoenskroon**	**Steynsrus**
Water Purification		
▪ Raw water supply: water is pumped from the Vals River to Bloemhoek Dam ("out-of-river" storage dam), requires upgrading (will not be able to provide future demand). ▪ A suitable site for an additional "out-of-river" storage dam must be considered as an alternative raw water source. ▪ Adequate purification capacity (2020). ▪ Will require additional reservoir capacity. ▪ New bulk water supply pipelines and pump stations will be required for future urban extensions.	▪ Raw water supply: Renoster River, supplemented by Vaal River, in need of upgrading. ▪ Purification capacity is not adequate. ▪ Additional reservoir capacity is required. ▪ New bulk water supply pipelines and pump stations will be required for future urban extensions.	▪ Raw water supply: Vals River piped to storage dam. ▪ Purification capacity is not adequate. ▪ Additional reservoir capacity is required. ▪ New bulk water supply pipelines and pump stations will be required for future urban extensions.
Waste Water Treatment Works		
▪ Residential developed is not allowed within 500 m of a waste water treatment plant		
▪ Several WWTW pump stations require upgrading. ▪ WWTW network requires upgrading. ▪ WWTW capacity will have to be increased to allow for new extensions.	▪ WWTW capacity will have to be increased to allow for new extensions. ▪ Ext 9 requires pump station.	▪ WWTW capacity will have to be increased to allow for new extensions. ▪ Pump stations and pipelines will be required to allow for new extensions.
Electricity		
▪ Eskom provides bulk for distribution by the Municipality to all precincts. ▪ Notified maximum demand from Eskom is 60 MVA, current load is 55 MVA (winter).	▪ Eskom provides bulk for distribution by the Municipality in Viljoenskroon. ▪ Distribution in Rammulotsi (excluding Ext 5) by Eskom directly.	▪ Eskom provides bulk for distribution by the Municipality in Steynsrus. ▪ Distribution in Matlwangtlwang by Eskom directly.

Kroonstad	**Viljoenskroon**	**Steynsrus**
▪ Although bulk is available, remote developments may require bulk transfer lines.	▪ Notified maximum demand from Eskom is 5 MVA (Viljoenskroon only), current load is 5,5 MVA (winter.) ▪ Bulk is not available for new developments.	▪ Notified maximum demand from Eskom is 1 MVA (Steynsrus only), Bulk is available for future developments.
Renovaal	▪ The area is completely serviced by means of electricity and water networks. ▪ Sewer is treated by means of sewerage tank for regular removal by the township developer. ▪ The management and the provision of bulk and infrastructure services in Renovaal are administrated by the township developer. ▪ The Municipality, at present, does not render engineering services in Renovaal.	
Vierfontein	▪ The area is completely serviced by means of electricity, water and sewer networks. ▪ Bulk water supply is obtained from the water purification works of Vierfontein South and the sewerage treatment plant is also jointly utilised by the Vierfontein town and the sectional title scheme based on an agreement. ▪ The management and the provision of bulk and infrastructure services in Vierfontein are administrated by Vierfontein Developers CC.	
Vaal Reefs	▪ The area is completely serviced by means of electricity, sewer and water networks. ▪ The management and the provision of bulk and infrastructure services in Vaal Reefs are administrated by *AngloGold Ashanti*.	

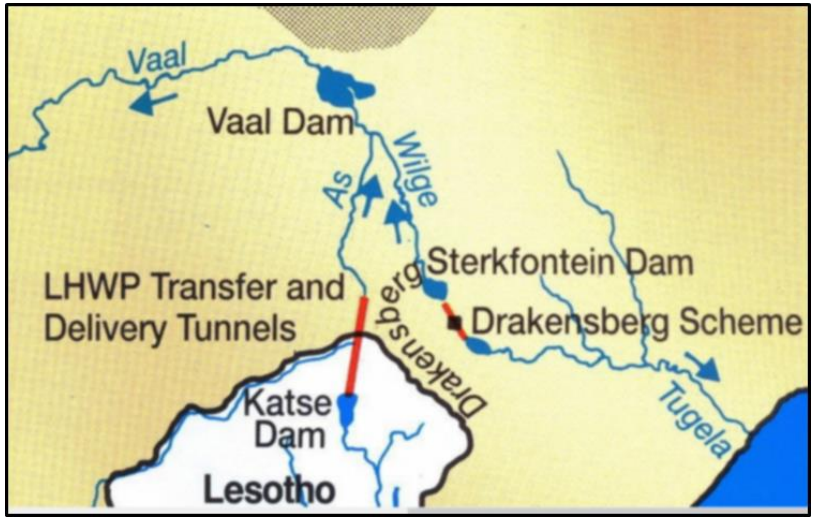
Raw Water Provision

Raw water supply to the various urban areas is as follows:

- Water from the Vals River is pumped to the Bloemhoek Storage Dam that serves as main raw water supply source to the urban urea.
- Additional counter measures such as supplementary pump lines were installed to ensure that adequate volumes of water could be stored in Bloemhoek Dam.

- The Vals River also provides raw water to Steynsrus. Water was predominantly abstracted from boreholes in the vicinity of the town, but abandoned due to high operating costs. Water is currently also pumped from the Vals River to storage dam.
- Water is pumped, especially during dry periods, from the Vaal River to the Renoster River that currently serves as main raw water supply to the urban areas of Viljoenskroon.

The Lesotho Highlands Water Project delivers water to South Africa via a transfer tunnel with its outlet in the upper reaches of the Axle River, a small tributary of the Vaal River near Clarens in the Eastern Free State. The water is currently released directly into the Axle River, from where it flows via the Axle River, and Wilge Rivers into the Vaal Dam. Water from the Vaal Dam is then abstracted, treated and pumped to the various users in the Rand Water supply area.



Possibilities also exist for the Moqhaka and Nala regions to benefit from the scheme. Water could be pumped from the Liebenbergsvlei River, for approximately 17km, to the upper catchment areas of the Vals River near Bethlehem. It may well ensure a regular source of raw water to both Steynsrus and Kroonstad, especially during periods of low rainfall and when the Vals River does not provide in adequate supply. Although the Lindley/ Ntha urban area is not located in the Moqhaka Region, its locality immediately adjacent to the Vals River implies that the community could also benefit from such a scheme. Detail investigations and studies, however, need to precede a scheme of this nature.

Road and Access Requirements
Roads in the rural areas are the jurisdiction of the Provincial Government (Department of Public Works, Roads and Transport) who is also responsible for maintenance and upgrading. It was calculated that 77 % (1 298 km) of the primary and secondary roads in the region are tarred and the remaining 23 % (379 km) are gravel. The figures exclude the vast number of tertiary gravel roads serving the farming community in the region. The major provincial road network is generally tarred and provides sufficient accessibility within the region. However, the deteriorating condition of particularly tarred roads, as a result of irregular maintenance, is a tangible concern. Studying the major road network will indicate that primary

Road and Access Requirements

arterials, both from a national and provincial perspective, run through the region and thus also play a significant role with regard to development. Apart from national roads (and the Kroonstad/Welkom Road) resorting under the jurisdiction of SANRAL, roads in the rural areas resort under the jurisdiction of the Provincial Government (Department of Police, Roads and Transport), who is also responsible for maintenance and upgrading of the network.

The major provincial road network is generally tarred and provides sufficient accessibility within the region. However, the deteriorating condition of particularly tarred roads, as a result of irregular maintenance, is a tangible concern. Depicted on major road network are primary arterials, from both a national and provincial perspective, traversing through the region, playing a significant role with regard to its development.

The well-developed character of the region is a direct result of it being serviced by means of a strategically important road network, identified as the:

- N1: National road linking the area with Gauteng and the central Free State,
- R59: Linking Sasolburg, Parys and Viljoenskroon/Orkney to the North West Province,
- R57: Linking the industrial areas of Heilbron with Sasolburg and subsequently linking the eastern Free State and KwaZulu-Natal via Sasolburg with the Gauteng Province,
- R34: Serves as link road from Kroonstad via Heilbron and Frankfort with the eastern areas of Gauteng (Heidelberg, Nigel, etc.).

Disaster Management Considerations : Hazardous Substances

Heavy vehicles carrying hazardous substances are increasingly occupying road reserves and parking areas, not assigned thereto, posing a health and safety risk that is escalated in the absence of effective and required law enforcement. Roads on which Hazardous Chemicals are currently being transported are:

- R59: Sasolburg → Parys → Potchefstroom,
- R716: Sasolburg → Deneysville → Villiers → KwaZulu-Natal,
- R57 & 34: Sasolburg → Heilbron → Frankfort → KwaZulu-Natal,
- N1: Sasolburg → Kroonstad → Bloemfontein,
- N1 & R34: Sasolburg → Kroonstad → Welkom.

Road and Access Requirements
Disaster Management Considerations : Emergency Bridge Plan The Directorate of Roads Planning (of the Department Polices, Roads and Transport) prepared a bridge emergency plan that provides for emergency and alternative routes, should bridges be flooded. **Regional Refuelling Stations** The substantial trajectory of the N1 between Kroonstad and Bloemfontein (210 km) will likely trigger the development of additional regional service stations. Land use control, should future refuelling stations be established must resort under the prepared municipal LUS and is supported as significant rural development initiatives. Regional service stations in this regard implies buildings with underground installations, located in rural areas adjacent to a higher order road or highway but without impeding on the integrity of the road or highway, with related signage and used for the fuelling of vehicles involving the sale by retail of petrol, diesel, oil and other petroleum products, serviceable by means of all engineering services and specific measures to capture any hydrocarbon or other pollutants and operating 24/7.

Table 9

Future Urban & Regional Road Requirements: Moqhaka Region

(Source: LMV, 2017)

Region	Road Requirements	Access Requirements
Regional Road Network and Future Access Requirements - Cross Cutting Issues: ▪ The deteriorating condition of gravel roads, as a result of irregular maintenance, is a tangible concern in the area, ▪ Gravel roads, linking urban areas, ensuring administrative linking, is in a dilapidated and unsafe condition, contributing to the difficulties of integrating the Municipality.		
Kroonstad	▪ **M6:** A future primary collector road will result in a direct link between the Welkom Road (M5) and the Viljoenskroon Road (M2) and in so doing, also increasing accessibility to the industrial zones in the Urban area, Maokeng and Brentpark.	▪ **M6:** The proposed primary collector road will improve accessibility by providing a direct access to Brentpark and the light industrial areas, as well as a direct access to Maokeng and Boitumelo Hospital (H) that functions as a regional hospital (A6).

Region	Road Requirements	Access Requirements
	▪ The nature of the road should, however, not be on the scale of a bypass route but rather a main collector route. ▪ **M7:** The future northern bypass will provide a direct link between the N1 National Road (M1), the Parys Road (M3) and the Viljoenskroon Road (M2). ▪ **L1:** An additional link road to the Central Business District (CBD) is proposed across the Vals River in the long-term. ▪ **L2:** A link road is proposed as an extension of Brits Street to link with the Smaldeel Road. ▪ **L3:** A direct link road is proposed between Maokeng and the Industria industrial area. ▪ **L4:** The re-alignment of the eastern portion of the Smaldeel Road past Marabastad is a priority as it will provide an additional link between Maokeng, the industrial area and the CBD via Piet de Vries Avenue. Since the road carries substantial pedestrian and cycle traffic volumes, specific provisions should be made for safe movement once upgrading thereof be considered. ▪ The latter is pertinent due to the fact that the Noordweg subway is functioning on capacity, while no future upgrading possibilities thereof exist. The Piet de Vries Avenue subway is a double lane subway that can easily accommodate additional traffic. ▪ The road reserve of the proposed re-alignment of the Smaldeel Road past Marabastad (L4), has already been	▪ Appropriate access will also be provided to the proposed new central sport terrain (S1). ▪ **A7**: With the completion of the Maokeng inner-ring road, an additional access to Maokeng will be obtained from the Viljoenskroon Road (M2).

Region	Road Requirements	Access Requirements
	formalised during the township re-establishment and formulation of Marabastad. ▪ The construction of this road is deemed a priority, as it will significantly increase accessibility to the CBD and industrial areas from Maokeng. ▪ **M4:** The major provincial road between Kroonstad and Bethlehem (especially between Kroonstad and Steynsrus), of late, became exceedingly decrepit and resurfacing thereof is deemed an extreme priority.	
Viljoenskroon	▪ **M1**: The provincial road P15/1 and P15/2 from Kroonstad to Klerksdorp extends through the study area from north to south. ▪ The road between Viljoenskroon and Kroonstad is in an extremely derelict condition, unsafe to utilise and rebuilding thereof identified as an extremely urgent priority. ▪ **M2:** Road P33/2 between Viljoenskroon and Bothaville and Road P33/3 between Viljoenskroon and Potchefstroom delineates the northern extremes of the Urban Fringe. ▪ Upgrading and repair of the road network is deemed exceedingly urgent and the conditions of certain sections (especially between Viljoenskroon and Kroonstad), are becoming unsafe and unusable. ▪ Due to the significance of the P15/2 (between Kroonstad/ Viljoenskroon and Orkney Road) and P33/2 (Potchefstroom/ Bothaville Road) provincial roads in a national context, the	There are three existing and direct access routes to Viljoenskroon (A1, A2 & A3) and three existing and direct accesses to Rammulotsi (A4, A5 & A6). Secondary Road S987 also provides a direct access to the industrial area and further to Viljoenskroon from the P33/2 provincial road. ▪ **A11:** An illegal and exceedingly unsafe access is taken via Road S1239 unto road P15/1. Former planning saw Road S1239 being realigned and linked with the main access road into Rammulotsi at A4 (stretching adjacent to the partially rehabilitated landfill site (S3). The latter trajectory was, however, never constructed. The concerned major road network provides adequate and direct access to the respective residential areas and the industrial area. No future major roads are therefore proposed. ▪ **A7 & A12:** Additional access from road S1239 will be required to provide access to the newly planned Northleigh precincts.

Region	Road Requirements	Access Requirements
	applicable building restriction area adjacent thereto, should be maintained in the future.	▪ **A8 & A9:** The proposed realignment of Road S1239 will necessitate additional access unto the Potchefstroom Road (P33/3) and the Vredefort road respectively. ▪ **A9:** An additional access will also be required in the near future on the Vredefort Road (Road S83) to ensure: - a more direct access to the future residential areas, further east (R3). - a more direct access of the agricultural hinterland to Viljoenskroon and the industrial area, diverting heavy traffic from the Rammulotsi neighbourhood. ▪ **A10:** Obtainment of Subdivisions 1 and 2 of the Farm Vlakvlei 417 will imply that the newly planned Northleigh precincts and the medium-term residential extension of Rammulotsi (R2) will be provided with feasible access to the Vredefort Road (Road S83) and Viljoenskroon.
Steynsrus	▪ Apart from the provincial primary road network between Kroonstad and Bethlehem (M1) and Steynsrus and Senekal (M2) and the secondary provincial road network to Edenville (M3) and Ventersburg (M4), no other significant roads are provided.	▪ **A5:** Access from the Kroonstad/ Bethlehem Road (P23/1) was granted by the Department of Roads, Transport and Police allowing direct access to Extension 3 and also serve as a more direct access to the Matlwangtlwang precinct. ▪ The configuration is deemed a high priority to revolve existing informal and exceedingly dangerous accesses from the provincial road by commuters from Matlwangtlwang. ▪ A cross intersection must be established at this intersection, once the northern hinterland (R2) of Matlwangtlwang is developed.

Region	Road Requirements	Access Requirements
		▪ **A6:** Additional accesses, from the Ventersburg secondary road (M4) were provided to Extension 2. ▪ **A7:** A similar access to the above, will have to be provided should a further residential extension be established at R4. ▪ The construction of a link roads, across the spruit, between the existing Matlwangtlwang and Extension 2 and future extensions (R4) will be required to ensure amalgamation between the two southern and northern precincts of Matlwangtlwang. ▪ **A8:** Development of the northern hinterland, adjacent to the Edenville Road (M3) will necessitate a new access to the provincial road. ▪ **A9:** Development at R4 and R3, although deemed long term, will require a higher order collector road between the Ventersburg road (at A7) and the Kroonstad Road (at A5) to contribute to the feasible integration of the various extensions of the Matlwangtlwang precincts.
Vierfontein	▪ The three shafts of the *Anglo Gold Ashanti* mining activities at the Vaal Reefs are linked with the R30 via the Stokkiesdraai Road; the R30 link via the R76 with Viljoenskroon, them being primary link road between Orkney and Viljoenskroon. ▪ The areas is, however, well and directly linked with Orkney, just opposite the Vaal River, through two tar roads and bridges crossing the river, affirming its more direct association with Orkney and the North West Province.	
Renovaal	▪ **A1:** Renovaal is less accessible through a secondary gravel provincial road, Road S641. ▪ The road links onto the Viljoenskroon/ Potchefstroom Road (R501), from where a secondary provincial gravel road (S641), provides access to the substantially isolated precinct.	

6.1 Spatial Planning Tools

In preparing the ensuing urban SDFs, the following Spatial Planning Tools were, amongst other, applied.

SPATIAL PLANNING TOOLS

- Walking distance
- Integration
- Densification and infill development
- Nodes
- Corridors
- Linkages
- Containment & Delineation
- Protection
- Lost Urban Space and Brownfield Regeneration
- Growth areas
- Commonage & Agricultural Land

- **Walking distance:** A convenient walking distance to public transport is often interpreted as maximum walking time of 5-10 minutes, and a maximum walking distance of 400-500 metres. There will be exceptions to these principles, particularly in deep rural areas, but these principles become applicable as soon as densities increase and where there is a need for efficient urban settlements and services.

- **Integration:** The implementation of the walking distance principle to promote greater access to opportunities for all people will require functional integration. Neighbourhood development should integrate a range of activities and therefore may be better described by its building and design typology. These issues are also resembled in reality where settlements are characterized by segregation of land uses and low-density development that cannot support public transport, or small businesses. To address these issues and achieve better access and integration, appropriate densification will have to be promoted in settlements.

- **Densification and infill development:** Densification is the increased use of space both horizontally and vertically within existing areas and new developments, accompanied by an increased number of units and / or population threshold. Development of open stands within existing settlements in order to optimise the use of infrastructure, increase urban densities and promote integration (DRDLR, SDF Guidelines, 2008).

- **Nodes:** Nodes are areas where a higher intensity of land uses and activities are supported and promoted. Typically any given municipal area would accommodate a hierarchy of nodes that indicate the relative intensity of development anticipated for the various nodes, their varying sizes, and their dominant nature - (DRDLR, SDF Guidelines, 2008).

- **Corridors:** A corridor features a combination of transport services and supporting infrastructure and denser mixed land use development integrated with the transport system, that includes land uses such as retail, residential, service industries, commercial, activities, social, agricultural

related uses and recreation. A corridor not only forms the link between nodes, but also relies on nodes along its length to generate movement and activity - (DRDLR, SDF Guidelines, 2008).

- **Linkages:** Linkages are routes that link urban areas, conservation areas, provinces and countries. These normally do not promote linear development along the route, but support nodal development. Linkages may be on national or international level and are mainly National and Provincial roads.
- **Containment:** To control and regulate development, limiting urban sprawl and an irregular urban form.
- **Protection:** To conserve, in order to prevent extinction and to ensure the forth growing for future generation.
- **Growth areas:** Growth areas are the combination of the increase in size, number, and extension of a certain area.
- **Commonage Land:** Commonage Land is land that is, or is to be, occupied or used by members of a community subject to the rules or custom of that community (Communal Land Rights Act 11 of 2004).
- **Urban Edge:** A demarcated line and interrelated policy that serves to manage, direct and limit urban expansion and lateral growth of settlements. An urban edge will promote densification and integration and protect valuable natural, agricultural and scenic resources.
- **Standard Planning Categories:** In preparing the Moqhaka Municipal SDF the Standard Planning Categories, with their subcategories, will be implemented. Implementation will be in alignment with the Free State PSDF by "*facilitating the land use classification of the entire land surface of the province in a standard format in accordance with defined Spatial Planning Categories, which are based on a broad spectrum of environmental parameters and a system of value and ethics*", including:

  - A – Core Conservation Areas
  - B – Natural Buffer Areas
  - C – Agricultural Areas
  - D – Urban Related Areas
  - E – Industrial Areas
  - F – Surface Infrastructure

6.2 Cross Cutting Issues applicable to all Urban Areas and Rural Areas:

A: CORE
Management Zones proposed in the Vredefort Dome World Heritage Site EMF and the Moqhaka EMF To aid strategic environmental management in the area, environmental management zones were delineated by grouping areas that share the same characteristics together. Areas were grouped based on their current use (e.g. Agriculture, Residential, Natural, etc.) and their sensitivity to different types of activities. The five (5) management zones are: ▪ Zone A: Sensitive terrestrial features in a natural or near-natural state; ▪ Zone B: Sensitive aquatic features in a natural or near-natural state; ▪ Zone C: Areas modified by agriculture; ▪ Zone D: Areas modified by residential development and tourism; and ▪ Zone E: Natural or near-natural areas that are less sensitive than Zones A and B ▪ Implementation of the Strategic Objectives and Management Zones of the Vredefort Dome World Heritage Site EMF and the Moqhaka EMF. [18] ▪ All development application have to be assessed in terms of the management zones proposed in the Vredefort Dome World Heritage Site EMF and the Moqhaka EMF. ▪ Implementation of the Strategic Objectives and Management Zones of the Vredefort Dome World Heritage Site EMF and the Moqhaka EMF. [19] ▪ No activities in environmentally sensitive areas. ▪ Riparian areas are an integral part of the river ecosystem and are regarded as important ecological features, which often experience substantial development pressures. They should be regarded as sensitive to activities that threaten to severely degrade them. ▪ No mining activities without relevant mining permits/ rights.

[18] **VDWHS Environmental Management Framework & Moqhaka Environmental Management Framework, 2013** (Source: Department of Environmental Affairs). The VDWHS is located within the North-West and Free State Provinces and falls under the jurisdiction of the Dr Kenneth Kaunda District and JB Marks Local Municipalities in the North-West Province and the Fezile Dabi District and Moqhaka and Ngwathe Local Municipalities in the Free State Province.

B: BUFFER
▪ Implementation of the Strategic Objectives and Management Zones of the EMFs. ▪ The areas within 32 m and 100 m of water courses, as defined in the National Water Act, and within 500 m of wetlands should be regarded as sensitive, further development in these areas will be subject to EIA procedures. ▪ No mining activities without relevant mining permits/ rights.

C: AGRICULTURAL AREAS
Urban Agriculture *To promote the long-term sustainable use and conservation of natural agricultural resources and the protection and preservation of agricultural land and its productive use in order to ensure long-term national and household food safety and security and profitable agricultural economic output* [20]. ▪ Implementation of the Strategic Objectives and Management Zones of the EMFs. ▪ Identification of suitable lost open spaces for urban agriculture practises. ▪ In partnership with the private sector and DAFF, conduct community awareness to promote food production on residential properties. ▪ Minimum area of smallholdings is 4 ha. ▪ Subdivision of smallholding in more than 3 portions (remainder and two subdivisions), will necessitate Township Establishment. ▪ Smallholdings not to be considered for any other form of permanent housing than single residential purposes. ▪ The subdivision or development of riparian farmland, where permissible, must allow a minimum 100 m waterfront to the remaining portion thereof.
Commonage ▪ Implementation of the Strategic Objectives and Management Zones of the EMFs. ▪ Refer to applicable “Urban Agriculture” cross cutting issues. ▪ No development on high potential agriculture land. ▪ Proper planning and management of all commonage land is required. ▪ Optimal utilisation, apart from current grazing and low intensity farming activities must be investigated. ▪ Implementation of well-planned and managed food gardens.

[20] Moqhaka EMF

Regional Agriculture

- No development must be allowed on high potential agriculture land.
- Implementation of the Strategic Objectives and Management Zones of the EMFs.
- Development on agriculture land, located beyond the Urban Fringe, may not commence prior to approval from the Department of Agriculture, Forestry and Fisheries.
- Permission must be obtained from the Department of Agriculture, Forestry and Fisheries regarding land, formally to be excluded from agricultural land, as pertained in the approved SDF.
- Future agricultural growth can primarily be created by value-added supplementary agricultural practices (Hydroponics, Tunnels, and Irrigation Schemes etc.).
- Current legal requirements relating to the alteration of natural veldt into cultivated fields must be adhered to.
- Subdivisions to riparian properties must ensure a minimum waterfront of 100 m for subdivisions and the remainder.
- Subdivisions of agricultural land will be considered for formal development of holiday resorts (non-permanent residing) and *Leisure Residential Developments* according to Free State Province, Department of Local Government and Housing, Spatial Planning Directorate's *Development of Rural and Peri-Urban Areas* Guidelines.
- The principle is, however, accepted to allow for subdivision of agricultural land, where the land is situated directly adjacent the formal town lands of urban areas with the exclusive aim to be utilised as smallholdings or small farms.

D: URBAN RELATED

Land Use Scheme

- Implementation of the Strategic Objectives and Management Zones of the EMFs for all urban related land uses.
- Absence of approved TPSs Vierfontein and Renovaal complicates land use management and "open title deeds" are not conducive for orderly urban development. The remaining urban areas each comprise a TPS.
- Land use management in Maokeng, Matlwangtlwang and Rammulotsi are conducted in terms of Act 4 of 1984 [21] ('Annexure F' of the Township and Land Use Regulation, No 1897 / 1986).
- As pertained in the SPLUMA, the Municipality is in the process of concluding the Moqhaka Land Use Scheme (LUS) providing for a uniform and integrated land use control policy, accommodating all urban areas and agricultural land in the area of jurisdiction of the Municipality.

[21] Act 4 of 1984 was since repealed in 1994, the regulations dealing with *Township and Land use* were not revoked.

Residential

- Densification relating to subdivision is restricted to the minimum erf sizes determined in the respective TPS and foreseen LUS (once gazetted).
- Developments constituting infill planning and densification must receive preference.
- Except for areas proposed for infill planning and where a TPS is implemented, the minimum erf size is 600 m^2 and in high density precincts, 350 m^2
- Densification by means of various housing options and typologies, as well as inclusionary housing, provided for in the LUS.
- Utility Installations [22] will not be permitted on residential land.
- **Student Accommodation/ Housing** is defined dwelling or part thereof used for the accommodation of a restricted number of *bona fide* students of a recognised primary, secondary or tertiary institute. No detached rooms will be permitted on the premises.

Central Business District (CBD) and Development Nodes

- All CBDs must appropriately be demarcated, providing for current development trends and for inclusion in the Moqhaka LUS.

Urban Open Spaces

- Refer to Core and Buffer areas, also depicting urban open spaces of environmental significance.
- Urban greening is almost non-existent in high density residential precincts and attempts in this regard, in liaison with the DAFF, must be deemed a priority.
- Continuous subdivision of functional and formal open spaces to accommodate social amenities and business land uses must be prohibited.
- A policy relating to numerous applications by faith base institutions is required, ensuring that development of properties occur within a realistic timeframe, and in failing to do so, land must revert back to the Municipality.
- In supporting the above, several smaller functional open spaces in all urban areas, are not developed and are proposed for levelling and gravel surfacing to establish informal sports areas. Reluctance in the provision of functional open spaces result in these premises becoming derelict and problematic for the surrounding community, often illegally dumping refuse on the premises and setting fire thereto.
- Provision of open spaces should be maintained according to CSIR Guidelines for the Provision of Social Facilities in South African Settlements – Medium Towns (First Edition: August 2012).
- Total provision of functional and formal open spaces has to be at least 0.5 ha/ 1 000 people, 40 % of this allocation is for strategic (regional) and district facilities and 60 % for community, urban and neighbourhoods parks, play lots, etc.

[22] UTILITY INSTALLATION - means a building or work used by a public-private utility undertaking, a radio, television or telecommunications transmission tower, but does not include a building designed wholly or principally as administrative or business premises or as a showroom.

- Lost urban space and brownfields, not being core, buffer or functional open spaces, could be utilised for infill planning purposes.
- Current and old excavated areas do not represent functional open spaces, unless properly rehabilitated and landscaped.
- Sand and gravel exploitation in urban areas are not conducive to living standards, carries substantial safety risks and detract from the amenity of convenience of residential precincts; these activities should be ceased and open cast pits, rehabilitated.
- Maintenance of existing infrastructure is deemed a priority.

Resorts and Tourism

To promote the optimal development and utilisation of the unique tourism potential of the Moqhaka region, whilst not compromising the outstanding universal value of the adjacent VDWHS and unduly impairing the safe, undisturbed and quiet enjoyment of the area.[23]

- Implementation of the Strategic Objectives and Management Zones of the EMFs.
- Similar to the Fezile Dabi District, the region experienced an increase in the tourism industry regarding weekend tourism destinations. Specific reference is made to the VDWHS, game ranches and guesthouses on farms.
- Support Leisure Residential and Resort developments[24].

Cemeteries

- Cleaning, fencing, greening and maintenance of existing and old cemeteries are deemed pertinent priorities.
- Provision must respect cultural diversity (for instance the acceptability of cremation, choice of separate sites and the like).
- The site selection of suitable land for burials is critical and requires prior geological and groundwater level (if applicable) studies.

E: INDUSTRIAL AREAS

Industries

- Implementation of the Strategic Objectives and Management Zones of the EMFs for all urban industrial related land uses.
- Provision of new / relocation of existing industrial areas must focus on road accessibility and proximity to the predominant labour forces.
- Industrial revitalisation is deemed a significant priority.

Extractive Industries (Mining)

[23] Moqhaka EMF

[24] As interim arrangement, development of holiday resorts (non-permanent residing) and *Leisure Residential Developments* will be according to the Free State Province, Department of Local Government and Housing, Spatial Planning Directorate's *Development of Rural and Peri-Urban Areas* Guidelines. The latter will be replaced by the foreseen LUS. No development will, however, be allowed on high potential agriculture land.

To promote new mining activities that does not threaten the outstanding universal value of the adjacent VDWHS[25].

- Implementation of the Strategic Objectives and Management Zones of the EMFs for all surface extractive activities.
- Current and old excavated areas do not represent functional open spaces, unless properly rehabilitated and landscaped – it must therefore be rehabilitated.
- Sand and gravel exploitation in urban areas are not conducive to living standards, carries substantial safety risks and detract from the amenity of convenience of residential precincts; these activities should be ceased and open cast pits, rehabilitated.
- Unless otherwise indicated, gravel is mostly exploited in urban areas for municipal road building, construction and maintenance purposes only.

F: SURFACE INFRASTRUCTURE & BUILDINGS
Landfill Sites *Agricultural activities seem to be the largest potential contributor to water pollution in the study area, followed by faulty sewage treatment facilities and unsafe landfill sites. These activities, and their related activities, should be managed to ensure minimum pollution risk[26].* ▪ Implementation of the Strategic Objectives and Management Zones of the EMFs for all surface extractive activities. ▪ Daily maintenance and operations at landfill sites are not addressed, resulting in intolerable pollution of the surrounding areas. ▪ Illegal dumping, especially at exploited rehabilitated excavation pits, located within residential areas is a prominent health risk and cleaning and rehabilitation of the areas to address illegal dumping must be addressed with resolve. ▪ Clear and caution signage at all illegal dumping areas, prohibiting utilisation as landfill sites / dumping. ▪ Residential development is not permitted within 500 m of a landfill site. ▪ Landfill sites not adhering to this threshold must be relocated to appropriate locations, not impeding on societies' health and safety.
Waste Water Treatment Plant ▪ Residential developed is not allowed within 500 m of a waste water treatment plant.
Regional Road Network and Future Access Requirements ▪ The deteriorating condition of roads, as a result of irregular maintenance, is a tangible concern in the region. ▪ As a consequence, linking of urban areas, ensuring administrative cohesion and integrating the Municipality are substantially delayed.

[25] Moqhaka EMF

[26] Moqhaka EMF

KROONSTAD / MAOKENG / BRENTPARK URBAN AREA .7

A: CORE	
STATUS QUO	FUTURE SPATIAL FRAMEWORK
The Vals River, several attributes and significant wetland areas, drain through the urban area. A series of weirs in the Vals River (dams include the Serfontein, Barend Wessels and Strydom Dams) ensure raw water provision to the urban area. The Bloemhoek Dam (an "out of river" storage dam) supports raw water provision, as water from the Vals River is pumped thereto to ensure potable water during periods of low rainfall.	▪ Optimal development and utilisation of the Vals River riparian and water sources (Bloemhoek Dam), not compromising the outstanding universal value thereof and unduly impairing the safe, undisturbed and quiet enjoyment of the area, must be considered. ▪ Significant surface water features (several dams in the Vals River and Bloemhoek Dam) as well as its tributaries must be regarded as sensitive to activities that might further deteriorate their quality.

B: BUFFER	
STATUS QUO	FUTURE SPATIAL FRAMEWORK
The Vals River, its tributaries and wetland areas of significance, drain form east to west through urban area. Several dams (mainly as raw water sources are constructed in the Vals River and adjacent thereto (Bloemhoek Dam). The riparian to these areas are deemed of extreme environmental significance and controlled development and limiting pollution thereof, are considered as substantial priorities.	▪ The Vals River, its tributaries, constructed dams and associated riparian areas thereto, are paramount natural resources and should be protected to minimise pollution thereof. ▪ The areas within 32 m and 100 m of water courses, as defined in the National Water Act, and within 500 m of wetlands are regarded as sensitive and development in these areas will not be permitted. ▪ **S11:** Further upgrading and development of the "Noord Oewer" park is considered as a priority. Portions thereof are at present utilised for the purpose of a "wildlife sanctuary". ▪ **S12:** A prominent vlei area, stretching between the Seeisoville and Marabastad precincts was partially rehabilitated. Although partial

STATUS QUO	FUTURE SPATIAL FRAMEWORK
	rehabilitation efforts occurred, completion thereof is essential; especially considering flooding and the safety of pedestrians in the area. ▪ **S15**: the implementation of appropriate development control at the Serfontein Dam water ski resort, amongst other allowing for access to the general public, must timely be addressed. ▪ **S 7, 9, 11, 14, 15, 16:** Proper management of the riparian must be implemented to intercept misuse and pollution of the area, being a principal source of raw water to the urban area. ▪ **G8:** Two illegal sand winning mining terrains subsequently exist on the Vals River riparian where sand was mined without the necessary permits and need to be rehabilitated as a matter of urgency; especially in view of the unsafe nature of the sites.

C: AGRICULTURAL AREAS	
STATUS QUO	FUTURE SPATIAL FRAMEWORK
Urban Agriculture	
F5 & F6: Substantial land parcels north of Kroonstad, being the hinterland to the urban area, are made available to tendering farmers for cultivation purposes and several small holdings (**F5**) rented to community members, securing income for the Municipality. Various formal smallholding and a vast number of small farms, occur adjacent the urban area (mostly to the southeast) namely: ▪ The Meadows (28 smallholdings), ▪ Vrischgewaagd (88 smallholdings), ▪ Riverside (14 smallholdings),	▪ **F1, F2 & F3:** Small farms and smallholdings, surrounding the urban area, have been included as smallholdings within the 'Urban Fringe', in the prepared Moqhaka Land Use Scheme that is in the process of being approved. ▪ Land use control measures, as pertained in the LUS will be applicable to all these premises to ensure the sustainable utilisation thereof. ▪ Illegal and undesired residential developments are occurring on smallholdings and must be prohibited as a matter of urgency.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
▪ Kraalkop (33 smallholdings), ▪ La Porte Vase (31 smallholdings) ▪ Buitenzorg (6 smallholdings).	▪ A Farming Production Support Unit (FSPU) is earmarked for the region and proposed on smallholdings, located north of the Viljoenskroon Road.
Commonage	
A large number of inhabitants in Maokeng and Brentpark require commonage land for the purposes of small-scale farming or communal grazing. The Department of Land Affairs, in collaboration with the Department of Agriculture, granted funds for the acquisition of: ▪ Subdivision 1 of the Farm Bospoort 558, ▪ Subdivision 1 of the Farm Winningdale 200, ▪ The Remainder of the Farm Riverdale 289 to the west of Maokeng.	▪ **F4:** The area to the west of Maokeng has been obtained by the Council for the purpose of small-scale farming and communal grazing; principally for the inhabitants of Maokeng. ▪ The sheer extent of the commonage land necessitates a proper investigation to determine whether the land could be utilised more efficiently and to the benefit of the larger community. ▪ Stray cattle plague almost all residential precincts and the implementation of a pound system, as a consequence, must be investigated, possibly with the assistance of relevant intuitions such as the SPCA / Veterinarian Services.
Agricultural Land Identified for Urban Development or Smallholdings	
Land parcels indicated in the table below are earmarked for inclusion within the Urban Fringe pertaining to this SDF and the LUS to ensure management thereof by the Municipality, according to land use control measures, also pertaining to the LUS. Exclusion of these land parcels from agricultural land is therefore evident.	
▪ The Farm Bloemspruit 975 ▪ The Farm Marksman 1024 ▪ The Farm Retreat 1770 ▪ The Farm Florida 868 ▪ The Farm Morris Rest 642 ▪ Subdivision 1 and Remainder of the Farm The Rest 1193 ▪ Subdivision 1 and Remainder of the Farm Bethel 657 ▪ The Farm Inverness 1628	▪ Subdivision 1 and Remainder of the Farm De Kroon 406 ▪ Subdivision 1 and Remainder of the Farm The Peak 2127 ▪ The Farm Buitenzorg 1901 ▪ The Farm Skibo 504 ▪ Subdivision 1 and Remainder of the Farm Buitenzorg 930 ▪ The Farm Berrie’s Rust 1304 ▪ The Farm Jordaans Hoek 339 ▪ The Farm Boville 373

STATUS QUO	FUTURE SPATIAL FRAMEWORK
▪ The Farm Excelsior 1172	▪ The Farm Geluk 986
▪ The Farm Mazelbroch 1578	▪ Subdivision 1 and the Remainder of the Farm The Rapids 1950
▪ Subdivision 1 and Remainder of the Farm Waterloo 1315	▪ The Farm East Mead 2323
▪ The Farm Versailles 1632	▪ The Farm De Hoop 2276
▪ Subdivision 1 to 5 and Remainder of the Farm La Porte Vase 77	▪ The Farm Welverdiend 2275
▪ The Farm Beverley 1894	▪ Subdivision 1 of the Farm Meadowsweet 1616
▪ The Farm Lahai-Roi 2126	▪ Subdivision 1 to 3 and Remainder of the Farm Bloemhoek 1212
▪ The Farm Stylte 2222	▪ The Farm Ricardum 215
▪ Subdivision 1 and Remainder of the Farm Turin 1912	▪ The Farm The Knoll 1782
▪ Subdivision 1 and Remainder of the Farm Petrus Heuvel 1862	▪ The Farm Berries Rust 340
▪ Remainder of the Farm De Kroon 406	▪ Subdivision 1 to 6 of the Farm Buitenzorg 553
▪ Subdivision 2 to 5 and Remainder of the Farm Lusthof 707	▪ The Farm Driehoek 1593
▪ Subdivision 1 of the Farm Half-Kroonsdrift 827	▪ Subdivision 1 and Remainder of the Farm The Rest 1193
▪ Remainder of the Farm Traffic 2162	▪ Remainder of the Farm Lusthof 707
▪ Remainder of the Farm Ballast Gat 964	▪ The Farm Steenwerp 2150 and Steenwerp 1840

D: URBAN RELATED

Urban Fringe

The “Urban Fringe” represents the outer limits or boundary for urban development. The proposed Urban Fringe should not be considered as an exact line but as a conceptual boundary to prevent further urban extension. The principle for identifying an Urban Fringe is primarily to discourage continuous urban sprawl and to promote integration and more compact towns and urban areas.

Substantial expansion of the Urban Fringe is not considered for the urban area; neither for short, nor for long term development purposes. The latter is a consequence of proactive planning by the Municipality and the timely attainment of land for long-term urban extension. Expansion of the Urban Fringe considered relating to several small farms and existing smallholding (F1, F2 & F3) surrounding the urban area, These land parcels have been included as smallholdings within the ‘Urban Fringe’, similarly in the prepared Moqhaka Land Use Scheme, now in the process of being approved. Land

use control measures, as pertained in the LUS will be applicable to all these premises to ensure the sustainable utilisation thereof. Illegal and undesired residential developments are occurring on smallholdings and must be prohibited as a matter of urgency.

Infill, Densification and Corridor Development

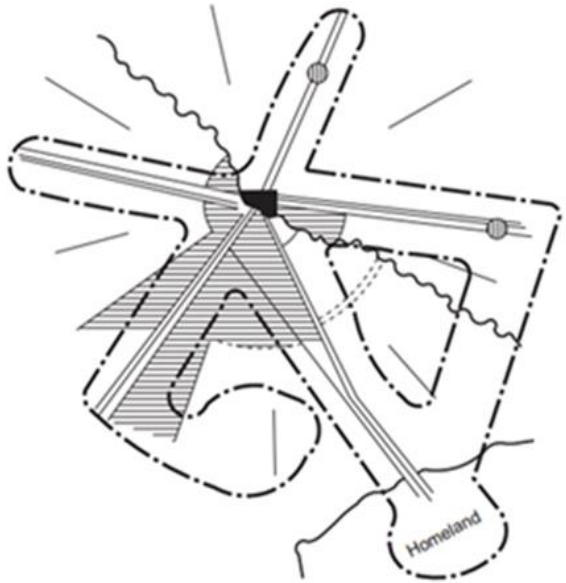
Incessant attempts to address infill planning of land between the residential precincts of Maokeng, Brentpark and Kroonstad resulted in urban area being fairly integrated with limited opportunities for infill planning. Restricted land parcels, mostly privately owned, may be available for this purpose. In addressing a more sustainable urban form, densification; especially through higher residential densities and mixed used developments, associated with significant transportation arterials, remains a viable alternative in the larger urban area.

The tendency towards continuing decentralisation of workplace locations is complicating the creation of "compact cities". Although compaction may be achievable as a means of increasing density, it is suggested that the predominant pattern in South Africa should be the "corridor city". Strategies need to be identified to attract decentralising activities toward existing public transport corridors (*CSIR, 2000: Human Settlement Planning and Design, "Red Book" also the source of the ensuing figure: "corridor densification option"*). Urban density is deemed significant in view of the following:

- Densification is deemed a development objective to pursue a more compact and viable urban form, thereby facilitating medium to higher densities by means of infill development and densification".
- Predominantly low densification has taken place in Kroonstad implying possibilities for growth through, amongst other, densification.
- Densification is generally feasible on existing properties and new developments and may well be accompanied by an increased number of units and/or population thresholds, as outline in the Moqhaka Land Use Scheme.
- Residential development in Kroonstad must be prioritised with the focus on densification and infill development rather than expansion.

Rapid neighbourhood expansion of the Maokeng precinct the past 15 years, with resultant urban sprawl westward, must be intercepted through the implementation of an Urban Fringe up to the gravel road to Bothaville (S183). In attaining further densification, through the identification of corridor bands, the following streets have been identified.

Corridor densification option



Infill, Densification and Corridor Development
- The formal Smaldeel Road, stretching from the Viljoenskroon road, through Maokeng, - Piet de Vries Avenue, extending through Marabastad, - A main access road into Maokeng, from Piet de Vries traffic circle into Seeisoville, - The link road between Maokeng and Brentpark, - 11th Avenue via the industrial area to Brentpark. The northern trajectory of Noordweg is naturally developing as a development corridor, as it serves as a main access road from Viljoenskroon and Parys into the Kroonstad CBD, and due to the limited expansion possibilities within the existing CBD. The corridor is earmarked for business related development and probably mixed and higher density residential options. The CBD is similarly extending in a linear manner adjacent Reitz Street, as the main access road into Kroonstad, from the N1 National Road.

Table 10

Summary of Current Housing Tendencies: Kroonstad / Maokeng / Brentpark Urban Area

(Source: Local Municipality, 2017)

Residential Area	**Erven**			**Erf & Land Requirements (Determined By Council)**
	Residential Erven Occupied	**Residential Erven Unoccupied**	**Total Residential Erven**	
Kroonstad	3 890	941	4 831	-
Maokeng	16166	4 969	21 135	-
Marabastad	1284		1 284	-
Brentpark	883	314	1 197	-
SUBTOTAL	**22 223**	**6 224**	**28 447**	**-**

STATUS QUO	FUTURE SPATIAL FRAMEWORK
Residential	
Maokeng Extensive development occurred specifically in Maokeng and nearly 10 000 new residential erven were developed since 1990. Recent precincts (i) between Maokeng and Brentpark, (ii) on land surrounding the Boitumelo Hospital up to the Viljoenskroon Road and (iii) between the Viljoenskroon Road and the exiting Maokeng precinct, are all unoccupied. The Marabastad neighbourhood was recently formalised, re-planned through applying re-blocking techniques and 1 284 residential sites (some of which were already occupied), were established. ▪ Administrative challenges must be addressed relating to illegal fencing, numbering, metering et cetera. **Brentpark** **R1 (Infill Planning):** Development of Brentpark gradually increased the past few years, but not as rapid as in Maokeng. A need was expressed by the specific community to provide additional residential erven in Brentpark and land between Maokeng and Brentpark was planned for this purposes, also integrating the two communities.	▪ **R1:** Further long-term development of medium density residential erven adjacent Brentpark; although physical restrictions may impact on the future urban layout. ▪ The proposed extension will necessitate the relocation of the existing Landfill Site (refer to **D**, Landfill Sites in an ensuing section). ▪ **R2:** Long-term high density residential extension of the Maokeng precinct towards the Viljoenskroon Road. ▪ **R3: (Infill Planning):** Erven 14242 & 10790, initially intended for a power line servitude, are available for limited infill planning; especially as the entire servitude is not required for future electricity provision. ▪ **☒:** The most recent extension of Maokeng, earmarked several and well located erven, all on major collector roads, for the provision of inclusionary housing (erven 31415, 31255, 32063, 32675, 33609, 33696)[27]. ▪ **R4 & ☒ (Infill Planning):** The small farm, Morgenzon 2337, initially required by the Roads Directorate, has, on their request, been transferred to the Municipality and is available for infill planning. Considering the ideal location of the property, a mixed use development and for inclusionary housing, with restricted commercial opportunities should ideally be established. ▪ **R5:** A settlement, generally referred to as the Naledi Trust area, occurred on the Farm Steenwerp 2150. The future formalisation

[27] The Moqhaka Lund Use Scheme defines inclusionary housing as a mixed housing development, comprising different affordable housing typologies with diverse densities that may be rental units or privately owned, accessible to public transport and related social amenities and may include RDP and GAP housing, semi-detached and or row housing, dwelling houses and the like to the satisfaction of the Municipality.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
Kroonstad **R6, 7, 8 & 9:** Several erven in the most recent extensions of Kroonstad, Jordania and Elandia, are unoccupied (approximately 940 erven). The erven are not provided with infrastructure services. **Informal Settlements** Unofficial housing settlements on municipal owned smallholdings are causing alarming concern, since current tenants are illegally and against contract conditions, establishing undesired residential developments. These settlements will cause particular difficulties, since these areas are earmarked for medium and long-term residential extension of Maokeng. It follows naturally that health and building regulations are not adhered to in respect of these developments. Apart from the above, there are neither informal settlements, nor areas identified for *in situ* upgrading in the larger urban area. A phenomenon ascribed to the continuous efforts by the Municipality to address the housing needs of the community. Although not all serviced, the Municipality comprises a substantial stock in residential erven to address future housing demands.	thereof is deemed important. Limited extension of the settlement is possible. ▪ **R6, 7 & 8 (Densification):** The low-density residential areas of Kroonstad, Elandia (R6), Heuwelsig (R7) and Tuinhof (R8), located to the north-east of the existing urban area, comprise adequate but un-serviced erven for long-term extension. ▪ **☒:** Infill planning: especially related to higher density residential developed is deemed feasible on the vast premise of the former convent premises (erf 7521) in the Jordania precinct. Although privately owned, subdivision thereof will offer ideal prospects for the optimal utilisation of "lost urban space". ▪ **R9 (Densification):** Long-term, low- and medium-density residential extension to the north of Heuwelsig and Tuinhof neighbourhoods. ▪ These areas are ideal for re-planning in offering more dense residential neighbourhoods, comprising smaller erven and a more diverse mix in housing typologies; also providing options for inclusionary housing. ▪ **R10 (Densification):** Open land adjacent Van der Lingen Street and the Kroonpark Holiday Resort may be considered for high cost residential developments, ideally located for densification purposes. ▪ **R11/ S7 (Infill):** Possibilities exist to redesign the existing golf course and, in doing so, provide a high cost residential estate, including an open portion of municipal owned land to the south east of the golf course. ▪ **R12 (Low Density Infill):** Provision for high cost residential extension, although privately owned land, could be considered to the south of

STATUS QUO	FUTURE SPATIAL FRAMEWORK
DRDLR *Development Potential in Urban Settlements Report* (2014) assessment: ▪ Urban Growth Potential - High ▪ Economic Potential - High	the existing Suidrand precinct. Development in the area will be subject to detail bulk services investigations. ▪ **I3:** Although not finalised, land located in the industrial area, currently owned by Transnet, was granted to the Municipality and development proposals were made by the Housing Development Agency, who oversees development of the specific area. ▪ **Δ4/ I2:** Incessant residential development towards 11th Avenue (main access to Brentpark/ *Kroondustria*) may result in the remaining industrial erven (6298 – 6303) continuously being converted into mixed use development i.e. service industrial development, commercial and high density residential developments.
Central Business District	
Kroonstad Kroonstad comprises a well-defined CBD consisting of 234 businesses. The Vals River (south) and the railway line (north) impede on extension of the CBD. Consequently the CBD is extending: ▪ Linear along Reitz Street as a main access road to Kroonstad from the N1 National Road. The area is presently characterised by a mixed use appeal. ▪ Linear adjacent to Noordweg up to the Checker Centre business node (Δ6). The southern trajectory of Noordweg naturally developed as development corridor, as it serves as a main access road from Viljoenskroon and Parys. The area is presently characterised by a mixed use appeal.	Due to the limited extension possibilities of the CBD, future extension will naturally occur along Reitz Street and Noordweg as main access roads to Kroonstad. **B 1, 2 & 3:** Two prominent refuelling stations are provided/proposed adjacent the N1, respectively to the north and south of the urban area, namely: ▪ B1: Existing Shell Ultra City and, ▪ B2: Proposed for extension of Shell Ultra City (motor show room). ▪ B3: Existing property earmarked for a refuelling station (not yet developed). ▪ **Δ8:** Long-term development of the Heuwelsig, Tuinhof and Jordania precincts will enhance business development in the area and the establishment of a neighbourhood centre is highly likely in future.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
- although the northern trajectory will remain residential, residential densification options and mixed residential land uses are deemed feasible adjacent this trajectory of the corridor. - areas further south, between the Checkers Centre (Δ6) and the railway line (delineating the existing CBD) should be deemed extremely valuable land aiming to accommodate business and mixed, higher density residential land uses (including park erf 1/ 1402). ▪ Linear along Bukes Street, as one of the main links (only three links are provided as a consequence of the railway line) between the Kroonstad CBD and the Northern residential precincts. The area is also presently characterised by a mixed use appeal. The two well-placed neighbourhood centres, the Checkers Centre (Δ6) to the north and Panorama Plaza (Δ7) to the south must remain as neighbourhood centres , not exceeding 8 000 m^2. **Maokeng and Brentpark** Provision was made in Maokeng for an accessible and centrally situated business centre (Δ1). Apart from proposed Δ5 earmarked for businesses, in the form of neighbourhood shops, additional nodes have not been identified in Brentpark.	▪ **Δ9:** Commercial/ high and mixed density residential development node. ▪ **S10:** The open area between the Vals River and the CBD, to the west of the CBD, has been identified to be developed as a formal public open space with limited developable portions thereof for business purposes. ▪ **Δ1 and Δ10:** The identified and centrally located business node in Maokeng has adequate capacity for long-term business development. ▪ **Δ5:** It is proposed that provision be made for a business node at Brentpark with the envisaged development of the area between Brentpark and the Phomolong residential area. ▪ **Δ2 - Δ5, Δ11 :** Various other business nodes, varying in size and nature, although not yet developed, have been identified ▪ **Δ9:** The former Kroonstad High School sport ground (erf 5873) was neither maintained nor utilised since the relocation of the school. Although State owned, the premises is exceedingly well-located and visible from the N1. It is deemed a typical example of lost urban space and must be considered for appropriate redevelopment. ▪ Direct access thereto from the N1 will, however, not be granted by SANRAL.
Kroonstad CBD and related Corridors It must be accepted that the extension of the Kroonstad CBD, as it exists presently, comprises limited space for expansion due to its locality in relation to the Vals River and the railway grounds (station and tracks). This exerts pressure on the Reitz Street and Noordweg corridors (and Bukes Street to	

STATUS QUO	FUTURE SPATIAL FRAMEWORK
a reduced extent) to systematically develop as an elongated extension of the CBD in an eastern and northern direction respectively. The phenomenon is deemed an irreversible urban dynamic, requiring a response to permit, control or prevent its development. Functioning as one of the most important accesses to the Kroonstad CBD, Reitz Street provides direct access to the CBD and the light industrial area of Kroonstad off the N1. From a more holistic perspective, it also connects the heavy industrial area, Brentpark and Maokeng with the national bypass road, thereby cementing this street's importance as primary access. This gives rise to so-called corridor or lint development. Corridor development, or activity axes development, is a modern, generally-accepted urban design principle. The identification of Reitz Street as a typical corridor is an important stimulus that will support urban development. As previously outlined, the southern trajectory of Noordweg naturally evolved as a development corridor and serves as main access into the Kroonstad CBD, from Viljoenskroon and Parys. The area is presently characterised by a mixed use appeal. ▪ Although the northern trajectory will remain residential, residential densification options and mixed residential land uses are deemed feasible adjacent this trajectory of the corridor. ▪ Areas further south, between the Checkers Centre (Δ6) and the railway line (delineating the existing CBD) should be deemed extremely valuable land, earmarked to accommodate business and mixed, higher density residential land uses.	
Commuting Nodes	
The only taxi terminus in Kroonstad is situated south of the railway station, on the northern extreme of the CBD and accommodates both short and long distances commuters. The site is optimally used and functioning beyond capacity. Apart from distributed and often not well-planned embarking and disembarking points at nodes of significance, no other formal commuting nodes exist in Kroonstad, Maokeng or Brentpark. An informal embarking point exists opposite the Boitumelo Regional Hospital constituting continuous pedestrian/ traffic conflicts. A more suitable location is therefore proposed at T2 (erven since planned and	▪ It is suggested that the Municipality urgently considers an Integrated Transport Plan (ITP), prepared in consultation with role-players, to holistically address, amongst other, commuter needs in the urban area. ▪ **T1:** Upgrading of the taxi terminus in Kroonstad (Selborne Square) has been identified as an urgent priority for several years – an alternative and suitably located node could be explored. ▪ Apart from several smaller taxi nodes in Maokeng, well-planed (traffic safety and exposure) sheltered embarking points and the provision of taxi bays for the safe embarking of taxis along collector roads are considered imminent priorities.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
pegged), in relation to the envisaged future main entrance to the hospital premises	▪ **T2:** A well located and substantial taxi terminus (or sub terminus) premises is identified and provided opposite the Boitumelo Regional Hospital (erf 30804). ▪ **T3:** Upgrading and/ or more suitable arrangements should be made to better accommodate the current informal node at the Checkers Centre. ▪ Illegal embarking and disembarking at the Sarel Cilliers bridge (opposite Shell garage) and at the Panorama Plaza, must be addressed as a priority.
Urban Open Spaces	
Apart from maintenance not adequately being done, Kroonstad has sufficient and well-developed sport and recreation facilities and has various developed parks such as: ▪ **S3**: Loubser Park and adjacent Show Grounds ▪ **S2**: The Seeisoville sport terrain has recently been developed to the level of a well-developed neighbourhood sport stadium. ▪ **S6:** Former rugby fields must remain as sport grounds ▪ **S7:** Golf Course ▪ **S8:** Correctional Services Golf Course ▪ **S9**: Jukskei Park (privately owned) ▪ **S13:** "Fanie se Gat" ▪ **S15:** Serfontein Dam water ski resort ▪ **S16:** Bloemhoek Dam riparian **S1:** A centrally accessible sport terrain was provided in Maokeng that, apart from a recently established astro turf soccer field, is not developed.	▪ Current and old excavated areas do not represent functional open spaces, unless properly rehabilitated and landscaped. ▪ Lost urban space and brownfields, not being core, buffer or functional open spaces, could be utilised for infill planning purposes. ▪ The identification of desirable parks in Maokeng is necessary to be developed for sport and recreational purposes (informal soccer parks). ▪ **S1:** A centrally accessible sport terrain was provided in Maokeng that should continually be developed. ▪ **S3:** The Loubser Park stadium needs to be upgraded as a regional athletics stadium. ▪ **S4:** The Nyakallong Resort is in a dilapidated state and urgent upgrading thereof is required to prevent it from becoming a ruin. ▪ **S5:** The Brentpark sports ground, although initially well-developed, needs urgent upgrading to prevent further deterioration thereof. ▪ **S7:** Possibilities exist to develop and upgrade the golf course and to provide housing in the area to establish a high cost residential estate.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
The Nyakallong Resort (**S4**) is generally in a dilapidated state and urgent upgrading thereof is required to prevent it from becoming derelict. Various formal and functional open spaces are provided; especially in the more recent extensions in Maokeng, adhering to the CSIR's *Guidelines for the Provision of Social Facilities in South African Settlements First Edition (August 2012)*, but are mostly undeveloped and unsatisfactory maintained. *Continuous subdivision of functional and formal open spaces to accommodate social amenities and business land uses must be prohibited. Several smaller functional open spaces in Maokeng, are not developed and proposed for cleaning, leveling and gravel surfacing to establish informal sports areas. Reluctance in the development of functional open spaces result in these premises becoming derelict and problematic for the surrounding community, often illegally dumping refuse on the premises and setting fire*	▪ **S10:** The open area between the Vals River and the CBD, to the west of the CBD, has been identified to be developed as a formal public open space with limited developable portions thereof for business purposes. This area renders ideal opportunity to be developed with day visiting and other recreation facilities to provide additional public access to the riverfront. ▪ **S11:** Further upgrading and development of the "Noord Oewer" park is considered as a priority. Portions thereof are at present utilised for the purpose of a "wildlife sanctuary". ▪ Proper management of the riparian must be implemented to intercept misuse and pollution of the area, being a principal source of raw water to the urban area. ▪ **S12:** A prominent vlei area, stretching between the Seeisoville and Marabastad precincts, was partially rehabilitated. Although partial rehabilitation efforts occurred, completion thereof is essential; especially considering flooding and the safety of pedestrians in the area. ▪ **S14:** An envisaged mixed use and residential development failed. Redevelopment thereof as a water bird sanctuary must be considered. ▪ **S15:** The implementation of appropriate development control at the Serfontein Dam water ski resort, amongst other, allowing for access to the general public, must timely be addressed. ▪ **S16:** Proper management of the Bloemhoek Dam riparian must be implemented to intercept misuse and pollution of the area, being a principal source of raw water to the urban area.

STATUS QUO	FUTURE SPATIAL FRAMEWORK

Public Open Spaces

- Continuous subdivision of functional and formal open spaces to accommodate social amenities and business land uses must be prohibited.
- A policy relating to numerous applications by faith base institutions is required, ensuring that development of properties occur within a realistic timeframe, and in failing to do so, land must revert back to the Municipality.
- In supporting the above, several smaller functional open spaces in all urban areas, are not developed and are proposed for levelling and gravel surfacing to establish informal sports areas. Reluctance in the provision of functional open spaces result in these premises becoming derelict and problematic for the surrounding community, often illegally dumping refuse on the premises and setting fire thereto.
- Provision of open spaces should be maintained according to CSIR Guidelines for the Provision of Social Facilities in South African Settlements – Medium Towns (First Edition: August 2012).
- Total provision of functional and formal open spaces has to be at least 0.5 ha/ 1 000 people, 40 % of this allocation is for strategic (regional) and district facilities and 60 % for community, urban and neighbourhood parks, play lots, etc.

Resorts and Tourism

The area is not considered as a primary tourist destination, although it is increasingly becoming a favourite weekend destination. The hunting and guesthouse industries displayed an exceedingly rapid growth the past few years. Recreation areas and facilities are predominantly confined to the urban areas. The Kroonpark, Jukskeipark and Serfontein Dam water-ski (to a lesser extent) recreation and holiday resorts in Kroonstad attract interest throughout the region.

- A total of nine provincial and national 'jukskei' tournaments are envisaged to take place in Jukskei Park, the national convergence of 'jukskei" in South Africa.
- Revitalisation of the Kroonpark Holiday Resort, as a favoured inland resort, is deemed necessary to enhance its economic vitality.
- Although the larger segment of the Vredefort Dome Word Heritage Site (VDWHS) is located within the Moqhaka Municipality, full advantage thereof is not taken. The economic advantage the area holds, is yet to be exploited by the Municipality.

Heritage Considerations :

The Free State Province played a significant role in the Anglo Boer War, resulting in a number of historically important tourist attractions. The Koppies area, for example, is becoming well known for various battlefields that are visited as tourist attractions (Battlefield Tourist Route). These tourist attractions of historical importance include, among other:

STATUS QUO	FUTURE SPATIAL FRAMEWORK

- Reverent Mahabane House [28] in Marabastad (Kroonstad), being a National Heritage Site,
- Conservation of the area below Strydom Dam is additionally evident as archaeological findings (artefacts) are present at this location,
- Kroonstad Concentration Camp Cemetery,
- Kroonstad Heroes Acre,
- Sarel Cillier's Farm.

All known heritage sites in the Moqhaka Region should be documented and listed in a Municipal Heritage Register for submission to the Provincial Heritage Resources Authorities. This is a listing of the heritage resources in the Moqhaka Municipality which are considered to be conservation-worthy in terms of the heritage assessment criteria set out in Section 3(3) of the National Heritage Resources Act.

Vals River

Due to the significant role the Vals River fulfils in the region, in providing potable water, everything possible must be done to restrict the pollution of these sources to the minimum. Riparian areas must be protected against injudicious use on account of their ecological aesthetic or recreational value taking amongst other, cognisance of:

- *Leisure Residential and Resort Developments* according to Free State Province, Department of COGTA's *Development of Rural and Peri-Urban Areas* Guidelines (2006), as provided for in the LUS,
- The Free State Province Biodiversity Plan (2015),
- Implementation of the Strategic Objectives and Management Zones of the Vredefort Dome World Heritage Site EMF and the Moqhaka EMF. [29]

[28] "Teacher, court interpreter, minister and first President-General of the ANC, Mahabane was described as a diplomatic, slow-speaking and calm man, who combined politics and Christian ethics to fight racism. He was keen to unite all blacks into one firm and positive political front. Through the ANC he constantly tried to educate Africans about their rights and made frequent representations against the colour bar. Mahabane lived and worked in Kroonstad for most of his long career." (*New Dictionary of South African Biography, 1995).*

[29] **VDWHS Environmental Management Framework & Moqhaka Environmental Management Framework 2013** (Source: Department of Environmental Affairs). The VDWHS is located within the North-West and Free State Provinces and falls under the jurisdiction of the Dr Kenneth Kaunda District and JB Marks Local Municipalities in the North-West Province and the Fezile Dabi District and Moqhaka and Ngwathe Local Municipalities in the Free State Province.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
▪ All development application have to be assessed in terms of the management zones proposed in the Moqhaka EMF.	
Cemeteries	
Adequate provision was made for future extensions of the existing cemeteries of Kroonstad, Wespark (C1) and Maokeng (C2) for the ensuing ten years. The cemetery in Brentpark (C3) is, however, completely occupied. Various older cemeteries are situated in the urban area, generally in a derelict condition and maintenance thereof is urgently required. ▪ **C6:** Seeisoville Cemetery ▪ **C7**: Boighsong Cemetery ▪ **C8**: "Old Maokeng Cemetery" located on Transnet property ▪ **C9**: Stilfontein Cemetery	▪ **C1:** Adequate provision was made for the long-term extensions of the Kroonstad Cemetery. ▪ Continuous maintenance and protection against vandalism of the Heroes Acre (**C4**) and Concentration Camp Cemetery (**C5**), being heritage resources of significance, are key priorities. ▪ **C6:** An area, not subject to the 1:100 year flood line, was identified adjacent the existing Brentpark sports terrain for the possible extension of the Brentpark cemetery. ▪ **C2**: Continuous extension of the Maokeng cemetery should be preceded by a proper Geotechnical Report. ▪ Continuous maintenance and protection against vandalism of unused cemeteries should be considered as a key priority. ▪ The provision of ablution facilities and fencing of cemeteries is urgently required.
Other Social Amenities (Refer to figure 10)	
Social amenities have, in the past, mostly been provided according to guidelines, gradually developed by the CSIR. However, older areas are mostly and often typical of under provision. More recently planned areas should reflect guidelines and standard provided by the CSIR, lately culminating in the *Guidelines for the Provision of Social Facilities in South African Settlements First Edition (August 2012)*.	▪ A policy/ bylaw is timely required: - whereby the continuing subdivision of valuable land earmarked for other social amenities should be prohibited, - to guide and assist faith based organisations in terms of requirements that need to be adhered to when applying for, and once a site has been obtained, - unceasingly protect the incremental use of public open space and other social amenity premises for faith based organisations.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
▪ Current demands; especially relating to faith based organisations, resulted in a dramatic increase in land parcels for this land use, above and beyond what is specified in the guidelines. ▪ Despite the required provision, demands seems to be ever increasing with a much higher need than what is provided. In order to intercept this need, formal open spaces and other social amenities erven are being subdivided, thereby negating the ideal provision of social amenities – a practice that is deemed undesirable and not contributing to sustainable human settlements.	

Sustainable human settlements are not achievable without adequate social facilities, differentiated according to varying development densities, community size, mobility levels and socio-economic disparity. The quality and capacity of facilities, in offering the right range of services for a specific community profile and operated by competent staff, together with good maintenance of the facilities, remain critical to the effective delivery of services.

E : INDUSTRIAL AREAS

STATUS QUO	FUTURE SPATIAL FRAMEWORK
Industries	
The heavy industrial area, *Industria* (**I1**) and light and noxious industrial area *Kroondustria* (**I2**) are situated to the north west of Kroonstad. A serious concern is the fact that the main access to the industrial area, from the major road network, is through the Kroonstad CBD resulting in dilapidated road surfaces in the CBD. The Gunhill industrial area is situated north of the Suidrand neighbourhood and is mainly utilised as a petroleum substance depot (**I4**).	▪ **I1:** *Industria* comprises several vacant sites and further extension thereof is not foreseen. ▪ **Δ4/I2:** Incessant residential development towards 11th Avenue (main access to Brentpark/ *Kroondustria*) may result in the remaining industrial erven (6298 – 6303) continuously being converted into mixed use development i.e. service industrial development, commercial and high density residential developments.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
Concerns have been raised that fuel tankers, piling up in an event to be refuelled, present a pertinent risk and are also conducive to the current dilapidated road surfaces in the area.	▪ **I3:** Vast portions of open land (Transnet properties) are also available in the industrial area, should a development need arise. The latter is in alignment with Transnet's policy to alienate land not in use. ▪ Although not finalised, land located in the industrial area, currently owned by Transnet, was granted to the Municipality and development proposals were made by the Housing Development Agency, who oversees development of the specific area. ▪ Proposed upgrading and extension of the current *Transnet Goods Shed* (if commencing) will also occupy large portions of land. ▪ **I5:** The possibility exists to establish an "Industrial Park" adjacent the N1, north of the existing urban area, if comprehensive investigations in this regard, proof it to be viable.
Extractive Industries (Mining)	
Diamond deposits are present in the vicinity of Kroonstad and have previously been mined at the Lace and Voorspoed diamond mines. *De Beers* commenced with the redevelopment of the two mining areas and exploitation is currently underway (refer to Rural Spatial Framework Plan). ▪ Current estimates see *De Beers* mining operations to be ceased during 2018, with opportunities, further exploitation of the Voorspoed mine, remains uncertain. ▪ Gravel is also exploited throughout the area. ▪ Limited sand winning (some of which are illegal) further occurs adjacent the Vals River.	▪ Gravel and sand exploitation and the rehabilitation of mining terrains must be preceded by permits (by virtue of the Mineral and Petroleum Resources Development Act, Act 28 of 2002). ▪ **G8:** Various illegal activities adjacent to the Vals River should be seized as a matter of urgency; especially in view of the detrimental effect of unorganised and uncontrolled activities on the environment ▪ Several sand winning mining terrains are present on the Vals River riparian (**G1-G3**) while gravel quarrying pits are distributed throughout the urban area (**G4-G7**).

F : SURFACE INFRASTRUCTURE & BUILDINGS	
STATUS QUO	FUTURE SPATIAL FRAMEWORK
Airfields	
The Kroonstad airfield is perhaps the most ideal for upgrading and presently comprises of a well maintained runway with additional grass covered runways. Its location is ideal in close proximity and with a direct access to the N1 National Road. Ample suitable land is also available for future extension. The airfield presently supports the agricultural orientated industries of the Greater Kroonstad. However, the airfield has recently been leased to a private company with no capacity to upgrade the existing runway. It is apparent that the lease agreement will have to be revisited in order to resolve the issue of maintaining existing infrastructure.	▪ The Kroonstad airfield may well purposefully be upgraded and extended to further support the agricultural orientated industries in Kroonstad. **National air freight hub and dry harbour facility (Kroonstad Airfield)** ▪ The Kroonstad airfield is ideally located for upgrading to a national air freight hub and dry harbour facility. Its location is ideal in close proximity and with a direct access to the N1 National Road. ▪ Although the airfield presently supports the agricultural orientated industries of the region, the potential thereof as a national air freight hub should not be overlooked. ▪ If maintenance of the airfield is not addressed as a matter of urgency, exceedingly valuable infrastructure will become dilapidated and the risk arises to forfeit its license to operate as a Civil Aviation approved airfield. The detrimental effect of the latter is evident.
Railway Lines and Stations	
The main railway line between Bloemfontein and the Gauteng Province stretches through Kroonstad. The railway line to Bethlehem also intersects with the above railway line in Kroonstad. The Kroonstad station is situated in the centre of the urban area. The predominant role that railway transportation plays in the urban context, are further confirmed by vast open areas of land presently owned by Transnet. These properties are distributed through the entire urban area	▪ The Kroonstad railway junction is a strategic node in the Spoornet rail system and will continue to play an important role in this regard. However, the dilapidated condition of the old station in Kroonstad is a matter of grave concern, notwithstanding gross negligence of a heritage site worth conserving.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
and Transnet previously indicated their willingness to alienate certain portions of land for normal urban development.	
Landfill Sites	
Expansion of the current regional landfill site, west of Brentpark must not be contemplated. Due to continuous complaints and concerns raised by the surrounding public and the current unsatisfactory health and environmental conditions (mainly due to ill-maintenance), relocation of the site has become a priority and general consent was reached that a more suitable regional landfill site should preferably be identified.	▪ **D:** The current regional landfill site has reached capacity and investigations should timely commence in identifying a site, not located within/ close to residential precincts, meeting all legal requirements and with capacity to serve the greater urban area in the longer term. ▪ Maintenance, clean up, save closure and rehabilitation of the existing site is deemed a priority and promptly required; especially in view of increasing pollution and incessant illegal dumping on its periphery. ▪ *The possibility of establishing well located transfer stations to the Kroonstad refuse dumping site (for example in Viljoenskroon, Renovaal, Steynsrus and Vierfontein) could be investigated as a long-term waste management solution in the Moqhaka Region.*

Engineering Services

Table 11
Bulk Services Provision Kroonstad / Maokeng / Brentpark Urban Area
(Source Moqhaka Municipality, 2017)

Water Purification
▪ Raw water supply: water is pumped from the Vals River to Bloemhoek Dam, requires upgrading (will not be able to provide future demand) ▪ Adequate purification capacity (2020) ▪ Will require additional reservoir capacity ▪ New bulk water supply pipelines and pump stations will be required for future urban extensions

Water Purification

- ***Green Water***
  - The significance of green water harvesting production is understated in the Moqhaka region.
  - The usage of green water could be enhanced by having or requiring specific building plan requirements herein and/ or supporting efforts by individual property developers harvest water.
  - Where it is done, property tax incentives/ rebates must apply.
  - Rethinking the abortion of storm water in retention ponds and numerous other measures must be further investigated.
  - Unaccounted water use and water losses will ensure financial viability in the familiar and conventional water purification measures.

Waste Water Treatment Works

- Residential developed is not allowed within 500 m of a waste water treatment plant
- Several Waste Water Treatment Works (WWTW) pump stations require upgrading
- WWTW network requires upgrading
- WWTW capacity will have to be increased to allow for new extensions
- ***Green Purification***
  - The significance of waste water use and alterative purification is understated in the Moqhaka region.
  - Existing systems for the utilisation of grey water by large consumers (sportsgrounds and schools) and open spaces, must be maintained and enhanced to benefit other users.
  - The usage of green sewerage could be enhanced by having or requiring specific building plan requirements herein and/ or supporting efforts by individual property developers utilising grey water and purification onsite.
  - Where it is done, property tax incentives/ rebates must apply.
  - Rethinking the abortion of storm water in retention ponds and numerous other measures must be further investigated.
  - Unaccounted water use and water losses will ensure financial viability relating to familiar and conventional water purification measures.

Electricity

- Eskom provides bulk for distribution by the Municipality to all precincts
- Notified maximum demand from Eskom is 60 MVA, current load is 55 MVA (winter)
- Although bulk is available, remote developments may require bulk transfer lines
- ***Green Electricity:***

Water Purification
- The significance of green electricity production is understated in the Moqhaka region. - Although not a specific national green energy zone (regarding sun, hydro and wind generation), green energy production could be enhanced by having specific building plan requirements herein and/ or supporting efforts by individual property developers to generate green electricity. - Where it is done, property tax incentives/ rebates must apply (where applicable and to a similar extent as rebates offered by Eskom).

Infrastructure Services

All urban areas were analysed in an attempt to identify shortfalls in infrastructure service delivery and to identify areas for eradication of backlogs or upgrading of services, the following categories were thus applied:

- Areas in the process of establishment (green)
- Areas established, unoccupied, without services (red)
- Areas established, occupied, with rudimentary services
- Areas established, unoccupied, with services, partly or completely (yellow)

Maokeng	**Kroonstad**	**Brentpark**
Infrastructure Service Provision:		
Water Network		
▪ Provided with water network ▪ Extension 9: Established, partially occupied, serviced ▪ Extension 10: Established, not occupied, no services ▪ Extension 11: Established, not occupied, serviced ▪ Extension 12: Established, not occupied, no services ▪ Extension 13: Established, not occupied, no services	▪ Provided with water network ▪ Tuinhof (Ext 71 & Ext 75): Established, not occupied, no services ▪ Elandia (Ext 64, 65 & 66): Established, not occupied, no services	▪ Provided with water network
Sewer Network		
▪ Provided with sewer network ▪ Extension 9: Established, partially occupied, serviced ▪ Extension 10: Established, not occupied, no services	▪ Provided with sewer network ▪ Tuinhof (Ext 71 & Ext 75): Established, not occupied, no services	▪ Provided with sewer network

Maokeng	**Kroonstad**	**Brentpark**
▪ Extension 11: Established, not occupied, serviced ▪ Extension 12: Established, not occupied, no services ▪ Extension 13: Established, not occupied, no services	▪ Elandia (Ext 64, 65 & 66): Established, not occupied, no services	
Electricity Network		
▪ Municipality service provider ▪ Provided with electricity network ▪ Extension 9: Established, partially occupied, partially serviced. ▪ Extension 10: Established, not occupied, no services ▪ Extension 11: Established, partially occupied, partially serviced ▪ Extension 12: Established, not occupied, no services ▪ Extension 13: Established, not occupied, no services	▪ Municipality service provider ▪ Provided with electricity network ▪ Tuinhof (Ext 71 & Ext 75): Established, not occupied, no services ▪ Elandia (Ext 64, 65 & 66): Established, not occupied, no services	▪ Municipality service provider ▪ Provided with electricity network

Regional Road Network and Future Access
Road Requirements
▪ **M6:** A future primary collector road will result in a direct link between the Welkom Road (M5) and the Viljoenskroon Road (M2) and in so doing, also increasing accessibility to the industrial zones in the urban area, Maokeng and Brentpark. The nature of the road should, however, not be on the scale of a bypass route but rather a main collector route. ▪ **M7:** The future northern bypass will provide a direct link between the N1 National Road (M1), the Parys Road (M3) and the Viljoenskroon Road (M2). ▪ **L1:** An additional link road to the Central Business District (CBD) is proposed across the Vals River in the long-term. ▪ **L2:** A link road is proposed as an extension of Brits Street to link with the Smaldeel Road. ▪ **L3:** A direct link road is proposed between Maokeng and the Industria industrial area. ▪ **L4:** The re-alignment of the eastern portion of the Smaldeel Road past Marabastad is a priority as it will provide an additional link between Maokeng, the industrial area and the CBD via Piet de Vries Avenue. Since the road carries substantial pedestrian and cycle traffic volumes, specific provisions should be made for safe movement once upgrading thereof be considered.

Regional Road Network and Future Access
▪ The latter is pertinent due to the fact that the Noordweg subway is functioning on capacity, while no future upgrading possibilities thereof exist. The Piet de Vries Avenue subway is a double lane subway that can easily accommodate additional traffic. The road reserve of the proposed re-alignment of the Smaldeel Road past Marabastad (L4), has already been formalised during the township re-establishment and formulation of Marabastad. The construction of this road is deemed a priority, as it will significantly increase accessibility to the CBD and industrial areas from Maokeng. ▪ **M4:** The major provincial road between Kroonstad and Bethlehem (especially between Kroonstad and Steynsrus), of late, became exceedingly decrepit and resurfacing thereof is deemed an extreme priority.
Access Requirements
▪ **A5 & A6:** The proposed primary collector road will improve accessibility by providing a direct access to Brentpark and the light industrial areas as well as a direct access to Maokeng and Boitumelo Hospital (H) that functions as a regional hospital. ▪ Appropriate access will also be provided to the proposed new central sport terrain (S1). ▪ **A7**: With the completion of the Maokeng inner-ring road, an additional access to Maokeng will be obtained from the Viljoenskroon Road (M2). ▪ **I5:** Long term development north of Kroonstad (industrial development) will necessitate access to the N1, reconfiguration at the existing shell garage intersection and access to the Parys/Kroonstad Road.

A : CORE

Apart from the Vaal River further north, its adjacent riparian areas and a number of shallow pans, mostly located on privately owned agricultural land, officially established conservation areas do not exist in the immediate surroundings of the urban area.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
A prominent vlei system (Olifantsvlei) drains through the study area from east to west. This marsh area is a sensitive ecological system and should be accommodated in an open space system, and not earmarked for any form of development. Sporadic flooding of the vlei resulted in substantial areas adjacent thereto, being undevelopable. Witpan is situated just to the north west of the study area. It has been identified as a sensitive ecological system that has been polluted and contaminated to a large extent as a result of the nearby urban development. The Renoster River is a minor left-bank tributary of the Vaal River (at Renovaal) and travers approximately 15 km further north form the urban area. The river is dammed by the Koppies Dam that divides the river into upper and lower basins. The lower basin of the Renoster River will, during high rainfall, serve as raw water source for the urban areas. Although, water is pumped from the Vaal River to a weir in the Renoster River to serve as primary raw water source.	▪ Optimal development and utilisation of the Renoster and Vaal River riparian and water sources in rural settings, not compromising the outstanding universal value thereof and unduly impairing the safe, undisturbed and quiet enjoyment of the area, must be considered. ▪ Significant surface water features as well as its tributaries must be regarded as sensitive to activities that might further deteriorate their quality. ▪ **S5:** The Olifantsvlei that drains through the study area from south to north and riparian areas must be accommodated in an open space system, not permitting any development thereof: - Activities such as urban agriculture and sport fields may be considered should they not impact on specific identified sensitive areas. - Proper management of the riparian must be implemented to intercept misuse and pollution of the area. ▪ **S6:** The Witpan has been identified as a sensitive ecological system. Any future development in the proximity of the pan should take cognisance thereof regarding pollution and contamination.

B : BUFFER	
STATUS QUO	FUTURE SPATIAL FRAMEWORK
Several significant water courses are present in the area, of which the Vaal and Renoster Rivers, Olifantsvlei and Witpan (S5 & S6) areas are present in the area. The riparian to these areas are deemed of extreme environmental significance and controlled development and limiting pollution thereof, are considered as substantial priorities.	▪ The Renoster and Vaal River, its tributaries, constructed dams and associated riparian areas thereto, are paramount natural resources and should be protected to minimise pollution thereof. ▪ The areas within 32 m and 100 m of water courses, as defined in the National Water Act, and within 500 m of wetlands are regarded as sensitive and development in these areas will not be permitted.

C : AGRICULTURAL AREAS	
STATUS QUO	FUTURE SPATIAL FRAMEWORK
Urban Agriculture	
Apart from several small farms, formal agricultural smallholdings are not situated adjacent the Viljoenskroon urban area. Inhabitants of Rammulotsi are seriously in need of land for grazing purposes. ▪ Purchasing of the farms is deemed significant to ensure realignment of Road S1239, warranting access to the existing agricultural community and the transportation of its products, limiting heavy and farming related vehicles, travelling through a sheer residential area. ▪ **F6:** A number of small farms are located directly northwest of Viljoenskroon. The properties comprise exceedingly high agriculture value and was previously declined for future residential extension by the National Department of Agriculture. ▪ It must be retained for agriculture and food security purposes.	▪ **F4:** The Council is, at present, engaging with governmental role-players to acquire additional land for commonage purposes. Portions 1 and 2 of the Farm Vlakvlei 417 (south of the urban area) are considered to be ideal for commonage purposes. ▪ **F5:** The proposed Urban Fringe also further signals the obtainment of the Remainder and portion 3 of the Farm Vlakvlei 417 for agricultural purposes. ▪ Purchasing of the farms is additionally significant to ensure a more direct access to the foreseen landfill site and the southern extremes of the recent Northleigh extensions (R2 - will be provided with feasible access to the Vredefort Road (A9 & A10).

<table>
<tr><th>STATUS QUO</th><th>FUTURE SPATIAL FRAMEWORK</th></tr>
<tr><td>Commonage</td><td></td></tr>
<tr><td>▪ F3: Portions of Subdivision 1 and the Remainder of the Farm Northleigh 422, not earmarked for residential extension (R2), and affected by the 500 m buffer related to the foreseen new landfill site, are available for commonage and grazing purposes.

F1/R1: Purchasing of subdivision 1 of the Farm Biesievlei 497 is evident. It will furthermore:
- warrant completion of a significant inner ring road, being a major collector road, ensuring accessibility to the existing and foreseen Northleigh extensions,
- permit a formal, long term and additional extension to the Rammulotsi precinct (A8), deemed prudent to ensure access to the medium and long term hinterland of the urban area (R3),
- ensure well located residential erven and a possible smaller business node (refuelling station) at A8,
- F1: May provide land for commonage purposes or for the “One Household One Hectare” program.</td><td>▪ F1/R1: Purchasing of subdivision 1 of the Farm Biesievlei 497 is evident to ensure the purposeful completion of the new residential extensions (4 001 erven) of Rammulotsi.
▪ F2: Medium to long-term high density residential extension is proposed directly to the east of the Northleigh precincts of Rammulotsi.
▪ Purchasing of farms in this region (the farms Seubring 153, La Bella D’ Afrique 254 are owned by the Municipality), namely Joffre 461 and Marne 421 (both privately owned) will ensure an adequate hinterland for long term expansion of the Rammulotsi precinct.
▪ The remainder of the involved farms (F1 & F2), beyond the proposed realignment of Road S1239, must be reserved for commonage purposes.</td></tr>
<tr><td colspan="2">Agricultural Land Identified for Urban Development or Smallholdings</td></tr>
<tr><td colspan="2">Land parcels indicated in the table below are earmarked for inclusion within the Urban Fringe pertaining to this SDF and the LUS to ensure effective land use control thereof by the Municipality. Exclusion of these land parcels from agricultural land is therefore evident.</td></tr>
<tr><td>▪ Subdivision 1 of Biesievlei 497 (F1)
▪ Joffre 461
▪ Marne 421
▪ Subdivision 1, 2 & 3 and the Remainder of the Farm Vlakvlei 417,
▪ Helpmekaar 543</td><td>▪ The Remainder and Subdivision 2 of the Farm Eindelik 529
▪ Subdivisions 1, 4 & 10 of the Farm Krigsvlei 80
<u>And:</u>
Several smaller properties in the vicinity of the Viljoenskroon station and industrial area:</td></tr>
</table>

STATUS QUO	FUTURE SPATIAL FRAMEWORK
▪ Subdivision 2 of the Farm Helpmekaar 376 ▪ Zaailand 336 ▪ Almansdam 406 ▪ Goedehoop 355 ▪ Subdivision 4 of the Farm Rendezvous 398	▪ Panbit 575 ▪ Subdivision 1 & 2 of the Farm Banbit 485 ▪ Subdivision 1 & 4 of the Farm Konningsdal 395 ▪ Subdivision 3 of the Farm Ethelsdale 405 ▪ Subdivision 1 of the Farm Huntersvley 401

D : URBAN RELATED

Urban Fringe

The "Urban Fringe"[30] represents the outer limits or boundary for urban development. The proposed Urban Fringe should not be considered as an exact line but as a conceptual boundary to prevent further urban extension. The principle for identifying an Urban Fringe is primarily to discourage continuous urban sprawl and to promote integration and more compact towns and urban areas. It is proposed to extend the former area of jurisdiction and previous SDF Urban Fringe to also include small land parcels and larger farm portions (also as such indicated in the Moqhaka LUS) in the earmarked Urban Fringe of this SDF.

Infill, Densification and Corridor Development

As limited immediate and shot-term opportunities initially existed, the urban area is deemed to be feasibly integrated with limited opportunities for further infill planning. In addressing a more sustainable urban form, densification, especially through higher residential densities and mixed used developments, associated with significant transportation arterials (although limited), also remains a viable alternative in the area. The continuous eastern sprawl of the Rammulotsi precincts, needs to be intercepted and residential expansion (R1 & R3) in this direction, caped. This tendency towards continuing decentralisation of workplace locations is complicating the creation of a more compact urban form. Long-term residential development in a western direction (R5) is perhaps the only feasible option to intercept incessant urban sprawl, as it currently occurs further east from the Viljoenskroon CBD and industrial area.

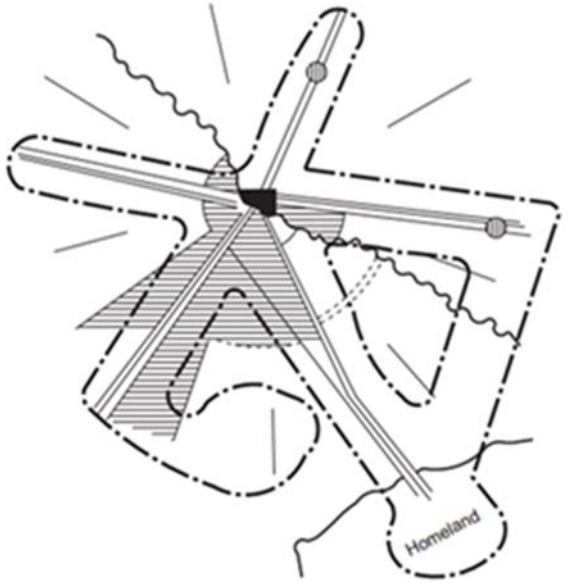
[30] The Moqhaka Land Use Scheme defined the Urban Fringe as a demarcated line portrayed in the approved Municipal Spatial Development Framework that separates urban areas from rural areas to establish a defined limit, beyond which urban development, must not be permitted to protect land for natural resources, agriculture, conservation and open space use.

Infill, Densification and Corridor Development

Although compaction may be achievable as a means of increasing density, it is suggested that the predominant pattern in South Africa should be the "corridor city". Strategies need to be identified to attract decentralising activities toward existing public transport corridors (*CSIR, 2000: Human Settlement Planning and Design*, "Red Book" also the source of the ensuing figure: "corridor densification option"). Urban density is deemed significant in view of the following:

- Densification is deemed a development objective to pursue a more compact and viable urban form, thereby facilitating medium to higher densities by means of infill development and densification.
- Predominantly low densification has taken place in Viljoenskroon, implying possibilities for growth through, amongst other, densification.
- Densification is generally feasible on existing properties and new developments and may well be accompanied by an increased number of units and/ or population thresholds, as outline in the Moqhaka Land Use Scheme.
- Residential development in Viljoenskroon must be prioritised with the focus on densification and infill development rather than expansion.

Corridor densification option



Rapid neighbourhood expansion of the Rammulotsi precinct the past 8 years, with resultant urban sprawl eastward, must be intercepted through the implementation of an Urban Fringe up to a foreseen new tertiary road, linking the Potchefstroom Road (A8) with the Vredefort Road (A9).

Corridor bands have been identified as follows.

- It is emphasised that the development of businesses along a main access road into Viljoenskroon, Krige (from A1) up to Burger Street, by means of corridor development, should be discourage.
- Corridor development is proposed adjacent to Krige Street from its intersection with Burger Street up to the existing CBD (refer to Map 19B).
- Due to continues development requests and several existing (illegal) business and institutional developments adjacent to Engelbrecht, Piet Retief and Denyssen Streets, CBD expansion is earmarked from the existing CBD towards the main entrance (A2) into Viljoenskroon, including these streets and earmarked properties adjacent thereto (refer to Map 19B).

Infill, Densification and Corridor Development
- Sheer business activities are not necessarily proposed, preferably an area of mixed uses, comprising higher density residential uses, guest houses, institutions, offices and commercial activities.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
Urban Sprawl : Long Term Residential Extension	
The realignment of Road S 1239 is deemed as the furthest eastern extreme of the urban area. Once urban expansion has reached this extreme, urban development must be considered in a western direction (R5). The following merits are deemed extremely significant considering long-term urban development and to ensure uninterrupted agricultural activities in the eastern rural areas: ▪ Road S1239 currently obtains illegal and direct access onto the Viljoenskroon/ Kroonstad Road (P15/1). The current access is deemed illegal, as Road S1239 was realigned during an application for Township Establishment in Rammulotsi on opposite sides of the road, in 2000, ▪ The said diversion implied access via the existing intersection on the Viljoenskroon/ Kroonstad Road being the main access into Rammulotsi. The diverted section was, however, never constructed and the access of Road S1239 remained as a direct link onto the Viljoenskroon/ Kroonstad Road, ▪ Road S1239 initially provided access to numerous farms, located further north-east of Rammulotsi, being a sheer agricultural area, and carries substantial volumes of agricultural related traffic (i.e. tractors and trailers transporting maize to the Viljoenskroon industrial area, located further south),	In view of the status quo, the SDF proposes the following feasible alternatives regarding the long term development of the urban area, and its associated urban fringe: ▪ **A8:** the realignment of Road S1239 is considered to link onto the Viljoenskroon/ Potchefstroom Road (P33/2) at an existing T-junction, and ▪ to ensure accessibility to the vast urban extensions east of Rammulotsi (Northleigh Phase 1 to 3 and also foreseen developments on Subdivision 1 of the Farm Biesievlei 497; estimated to ultimately comprise 7 000 erven), ▪ The realigned road warrants access to the existing agricultural community and the transportation of its products, limiting heavy and farming related vehicles, travelling through a sheer residential area. ▪ The envisaged realignment will additionally ensure a more direct link to the Viljoenskroon industrial area; not through residential precincts. Long Term Development of Farmland East of Rammulotsi: ▪ The continual expansion of Rammulotsi further east (further than R1, R2 & R3), does not constitute an ideal “circular” urban form,

STATUS QUO	FUTURE SPATIAL FRAMEWORK
Urban Sprawl : Long Term Residential Extension	
▪ Road S1239 also provided limited access to small urban extensions of Rammulotsi, located west thereof. However, recent vast extensions of the Northleigh precincts, imply that the road now, and in future, will carry considerable traffic volumes, ▪ Its function as a secondary provincial road, ensuring accessibility to the agriculture area and the transportation of agricultural products (especially during the harvest season), as a consequence, became redundant, ▪ The section of Road S1239 through Rammulotsi, should therefore preferably be considered as a high order urban distributor street (A11, A7, A12). ▪	▪ The larger section of the community is continuously settled far-removed from the Viljoenskroon CBD, social amenities and job opportunities in the industrial area, ▪ The current urban form is furthermore not conducive to urban integration and it was suggested that urban sprawl further east, should be intercepted[31]. The most desirable curbing mechanisms were proposed as (i) the future use of outlying land parcels for agricultural purposes (F1, F2 & F3) and simultaneously, (ii) a future main road, linking the Viljoenskroon/ Kroonstad Road (P15/1) in a more direct approach, with the Potchefstroom Road (P33/2). The realignment will: ▪ allow for suitable access to the far northern parameters of the Rammulotsi precinct (an approximate 7 000 dwelling units), ▪ ensue a more direct approach between the Viljoenskroon/ Kroonstad Road (P15/1) and the Potchefstroom Road (P33/2), ▪ establish ideal business opportunities on the Viljoenskroon/ Potchefstroom Road (P33/2), ▪ simultaneously address the realignment of Road S1239,

[31] Urban design seeks to create sustainable urban environments with long-lasting structures, buildings and overall liability. Walkable urbanism, constituted by a circular urban form, aims to reduce environmental impacts by altering the built environment to create smart cities that support sustainable transport. Compact urban neighbourhoods encourage residents to drive less. These neighbourhoods have significantly lower environmental impacts when compared to sprawling suburbs. To prevent urban sprawl, circular flow land use management ought to be introduced in promoting a circular land use pattern, developing smart growth, walkability, opposing the increasing monofunctional housing estates and suburban sprawl.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
Urban Sprawl : Long Term Residential Extension	
	▪ ensure a more feasible and appropriate distributor road for the larger farming community to the industrial area, ▪ ensure a more feasible and appropriate distributor road for the Rammulotsi precinct to the Viljoenskroon CBD, other social amenities and the industrial area, and ▪ establish a curbing fringe between urban and agricultural development.

Table 12
Summary of Current Housing Tendencies: Viljoenskroon/ Rammulotsi Urban Area
(Source: LMV, 2017)

	Erven			**Erf & Land Requirements (Determined By Council)**
Residential Area	**Residential Erven Occupied**	**Residential Erven Unoccupied**	**Total Residential Erven**	
Viljoenskroon	608	103[32]	**711**	-
Rammulotsi	5 582		**5 582**	1 500
Northleigh Phase 1 & 2	4 001		**4 001**	
Northleigh Phase 3		1 022[33]	**1 022**	
TOTAL	**10 191**	**1 125**	**11 316**	**1 500**

[32] Un-serviced residential erven

[33] Although 1 500 erven were planned, funding was only available for the planning and pegging of 1 000 erven and 1 044 (of which 1 022 erven were residential erven) erven finally came to pass, known as Northleigh Phase 3; 500 erven are therefore still, available, although not pegged

STATUS QUO	FUTURE SPATIAL FRAMEWORK
Residential	
Rammulotsi: Rammulotsi comprises of a total of 9 583 residential sites. The Northleigh precinct comprises 5 023 residential erven, mainly to address an accumulated housing backlog of nearly 10 years. It is deemed necessary to commence with future planning to ensure the effective solving of the current housing backlog in the Rammulotsi precinct. ***R1 & R3:*** *The continual expansion of Rammulotsi further east does not constitute an ideal "circular" urban form and is characterised by incessant urban sprawl that must be intercepted.* ***F1 & F2:*** *Farmland in this region (the Farms Seubring 153 and La Bella D' Afrique 254 since obtained and Subdivision 1 of Biesievlei 497, Joffre 461 and Marne 421 to be obtained) will ensure an adequate hinterland for long term expansion of the Rammulotsi precinct. However, the remainder of the involved farms, not earmarked for residential extension, must be reserved for agricultural and/ or commonage purposes and not considered for residential extension.* **S3:** A former landfill site (being an excavated gravel quarry) has previously partially been rehabilitated and initially developed as a soccer field, although no longer utilised for this purposed. **The terrain is not suitable for any other used; especially not infill planning as a consequence of potential subsidence.**	▪ **R1:** Purchasing of the Farm Biesievlei 497 is evident to ensure the purposeful completion of the new residential extensions (4 001 erven) of Rammulotsi. Obtainment of the land parcel is deemed prudent as it: - is required to ensure the functional and long term urban layout of Rammulotsi, - will link the urban areas of Rammulotsi with the adjoining provincial road network, - will ultimately guarantee a future access onto the Viljoenskroon/ Potchefstroom Road (P33/3), - will create business opportunities on the Viljoenskroon/ Potchefstroom Road (P33/3). - F1: The remainder of the farm must remain for commonage purposes ▪ **R2:** Short-term high density residential extension is proposed directly to the south-east of the newly approved precincts of Rammulotsi. It is estimated to provide an approximate 1 000 new erven in the concerned area (on the Remainder of the Farm Northleigh 422). ▪ Areas closer to the Kroonstad Road (P15/1) may be water lodged – development thereof should be preceded by detailed geotechnical investigations in view of an anticipated low groundwater table. ▪ **R3:** Medium to long-term high density residential extension is proposed directly to the east of Northleigh precincts of Rammulotsi, not progressing beyond the proposed realignment of Road S1239.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
Viljoenskroon: There are a total of 711 residential premises in Viljoenskroon of which 103 (R4) are unoccupied and also partially not provided with engineering services. Residential growth and development is latent in Viljoenskroon and adequate sites are available for short to medium-term residential extension; especially should infrastructure services be provided. Small villages (at Great Noligwa, Kopanang and Moab Khotsong Mines) and hostel complexes were developed at Great Noligwa and Kopanang mines, in proximity of Viljoenskroon (adjacent to the Vaal River) although Orkney, located much closer, acts as central place[34] to these areas that comprise an approximate 3 000 hostel units with an estimated population of 9 000 residents (refer to Vierfontein under section 10 for more details).	▪ **Infill Planning**: The Department of Education needs to be approached regarding school sites in Rammulotsi, not envisaged for utilisation, to be re-planned for residential purposes. ▪ **Infill Planning - R6**: Infill Planning surrounding the decommissioned Landfill Site (Northleigh Phase 1 & 2). ▪ **☒:** The most recent extension in Northleigh (Phase 3), earmarked two well located erven, on major collector roads, for the provision of inclusionary housing[35] (erven 10619 & 11110). ▪ **R4:** Residential growth and development is latent in Viljoenskroon and adequate sites are therefore available for short to medium-term low-density residential extension; erven in the area are, however, not completely serviced. ▪ **R5:** The proposed realigned Road S1239 is considered the furthest eastern extreme of the urban area. Once urban expansion has reached this extreme, urban development must be considered in a western direction, constituting a circular compact and more sustainable urban form, limiting urban sprawl and the incessant encroachment on high potential agricultural land.

[34] The "Central Place Theory " was created by the German geographer Walter Christaller, who asserted that settlements simply functioned as 'central places' providing services to surrounding areas.

[35] The Moqhaka Lund Use Scheme defines inclusionary housing as a mixed housing development, comprising different affordable housing typologies with diverse densities that may be rental units or privately owned, accessible to public transport and related social amenities and may include RDP and GAP housing, semi-detached and or row housing, dwelling houses and the like to the satisfaction of the Municipality.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
Central Business District	
Viljoenskroon: Viljoenskroon has a well-defined CBD consisting of an approximate 130 businesses. The CBD developed similar to a typical business area in the centre of the town surrounding the original market square. Continuous mixed use development, and applications to its affect, are persistent surrounding the CBD and main access routes thereto, inclining the Municipality to allow neighbourhood intrusion through extending the CBD's current parameters. **Rammulotsi:** No defined or well-developed business centre is present in Rammulotsi. Business development in Rammulotsi principally consists of a network of neighbourhood shops (approximately 80 erven) along collector roads that are dispersed throughout the area. Apart from business premises surrounding the existing taxi rank (T1) and municipal offices, although ill developed, several other prominent business nodes (Δ1, Δ2, Δ3, Δ4 & Δ5) are available for commercial development in Rammulotsi and the Northleigh precincts.	▪ Considering the latent business development of the Viljoenskroon CBD, adequate capacity is available for development and densification in the existing CBD. ▪ It is emphasised that the development of businesses along a main access roads into Viljoenskroon, Krige Street, up to Burger Street (A1), by means of corridor development, should be discourage. ▪ Corridor development is proposed adjacent to Krige Street from its intersection with Burger Street up to the existing CBD (refer to Map 19B) ▪ Due to continues development requests and several existing (illegal) business and institutional developments adjacent to Engelbrecht, Piet Retief and Denyssen Streets, CBD expansion is earmarked from the existing CBD towards the main entrance (A2) into Viljoenskroon, including these streets and earmarked properties adjacent thereto (refer to Map 19B). ▪ Sheer business activities is not necessarily proposed, preferably an area of mixed uses, comprising higher density residential uses, guest houses, institutions, offices and commercial activities. *Business nodes in Rammulotsi must not be considered for other social amenities; especially since commuting distances to Viljoenskroon are exceedingly extended and the need for a well dispersed network of business nodes in the high density residential areas of Rammulotsi, is evident.*

STATUS QUO	FUTURE SPATIAL FRAMEWORK
Δ1 & Δ3: Two well-located business premises are provide at the entrance to Rammulotsi, reasoned extremely ideal for development in serving the traveling public and the communities of Rammulotsi and Viljoenskroon. The value of land in this area is paramount and applications to avail additional land for this purpose in the specific area, must be supported. DRDLR *Development Potential in Urban Settlements Report* (2014) assessment: ▪ Urban Growth Potential - Medium ▪ Economic Potential - Medium	▪ **I1:** A small number of light industrial erven, also at the taxi rank and existing municipal offices, must also be considered for a broader commercial and business application. ▪ **Δ4:** Two substantially large premises (erf 11195 for business and erf 11194 for municipal purposes) were provided in the far eastern sections of the recent Northleigh extensions, as these areas are becoming increasingly remote and isolated from the Viljoenskroon CBD and other commercial/ social amenities. ▪ It is foreseen that duplication of social amenities and satellite offices, may well occur at these locations. ▪ **Δ3:** Is proposed for, amongst others, a refuelling station. ▪ **A8:** Realignment of Road S1239 will ensure access to the medium and long term hinterland of the urban area (R3) and a possible smaller business node (refuelling station) on Road P33/3 to Potchefstroom.
Commuting Nodes	
A taxi terminus is strategically situated in Rammulotsi that functions as a short and long distance terminus (T1). Upgrading thereof, especially relating to adequate lighting for security purposes, is deemed a priority. A second taxi terminus is located in Viljoenskroon and functions as a short distance taxi terminus (T2).	▪ **T1 & T2:** A need has been identified for the provision of adequate lighting for security purposes at the taxi terminus in Viljoenskroon and the terminus in Rammulotsi. Maintenance of the areas, however, is a pressing shortcoming.
Urban Open Spaces	
Viljoenskroon: Viljoenskroon comprises a well-developed sport facility, providing for a variety of sport events including golf, tennis, cricket, netball, bowling, soccer and rugby (S1). Public open spaces in Viljoenskroon are developed	▪ **S1 & S2:** The upgrading and redevelopment of the existing sport facilities in both communities are reasoned an urgent priority. ▪ **S3:** A former landfill site (being an excavated gravel quarry) has previously partially been rehabilitated and initially developed as a

STATUS QUO	FUTURE SPATIAL FRAMEWORK
for recreation purposes, but are not maintained regularly, also implying to the aforesaid facility. **Rammulotsi:** Provision was made for a centrally situated sport terrain in Rammulotsi that was developed as a soccer field with an ablution facility (S2). Due to irregular maintenance as a result of inadequate funds, the sport facility is not in a preferable state. Various formal and functional open spaces are provided; especially in the more recent extensions in Rammulotsi, adhering to the CSIR's *Guidelines for the Provision of Social Facilities in South African Settlements First Edition (August 2012)*, but are mostly undeveloped and unsatisfactory maintained.	soccer field, although no longer utilised for this purposed. ▪ The terrain is not suitable for any other use; especially not infill planning as a consequence of potential subsidence. ▪ Upon relocation of the existing landfill site, rehabilitation of the landfill site and quarry must be continued to safeguard the area.

Continuous subdivision of functional and formal open spaces to accommodate social amenities and business land uses must be prohibited. Several smaller functional open spaces in, are not developed and proposed for cleaning, levelling and gravel surfacing to establish informal sports areas. Reluctance in the development of functional open spaces result in these premises becoming derelict and problematic for the surrounding community, often illegally dumping refuse on the premises and setting fire thereto.

Public Open Spaces:

- Continuous subdivision of functional and formal open spaces to accommodate social amenities and business land uses must be prohibited.
- A policy relating to numerous applications by faith base institutions is required, ensuring that development of properties occur within a realistic timeframe, and in failing to do so, land must revert back to the Municipality.

- In supporting the above, several smaller functional open spaces in all urban areas, are not developed and are proposed for levelling and gravel surfacing to establish informal sports areas. Reluctance in the provision of functional open spaces result in these premises becoming derelict and problematic for the surrounding community, often illegally dumping refuse on the premises and setting fire thereto.
- Provision of open spaces should be maintained according to CSIR Guidelines for the Provision of Social Facilities in South African Settlements – Medium Towns (First Edition: August 2012).
- Total provision of functional and formal open spaces has to be at least 0.5 ha/1 000 people, 40 % of this allocation is for strategic (regional) and district facilities and 60 % for community, urban and neighbourhood parks, play lots, etc.

Resorts and Tourism

Tourism only contributed 3.1 % to the GDP of the district in 2010. The industry needs to grow to levels as experienced in the Province which has a contribution of 5.9 % of GDP. Tourism in the district has been growing steadily at 3.4 % per annum. As could be expected, the Ngwathe area has the highest levels of tourism at 9.7 % of GDP, while the Metsimaholo area has only a 1.7 % contribution to GDP. There is a potential for growth in the tourism sector and needs to be exploited, especially in terms of the domestic market (Fezile Dabi District Municipality LED Report, 2013).

The Moqhaka area is not considered as a primary tourist destination, although it is increasingly becoming a favourite weekend destination. The hunting and guesthouse industries displayed an exceedingly rapid growth the past few years. Stokkiesdraai and Wawielpark recreation and holiday resorts adjacent the Vaal River in the Viljoenskroon area are increasingly becoming popular tourist destinations. There are also numerous smaller resort type developments, lodges, guesthouses/farms adjacent to the Vaal River, significantly contributing to the tourism sector.

Vaal & Renoster Rivers

Due to the significant role of the Vaal and Renoster Rivers fulfil in the region in providing potable water, and in close proximity of Viljoenskroon, everything possible must be done to restrict pollution of these resources. With this in view it is considered undesirable that large increase in the population concentration takes place in riparian areas. Riparian areas must be protected against injudicious use on account of their ecological aesthetic or recreational value taking amongst other, cognisance of:

- *Leisure Residential and Resort Developments* according to Free State Province, Department of COGTA's *Development of Rural and Peri-Urban Areas* Guidelines (2006),
- The Free State Province Biodiversity Plan (2015),

- Implementation of the Strategic Objectives and Management Zones of the VDWHS EMF and the Moqhaka EMF [36],
- All development applications have to be assessed in terms of the management zones proposed in the Vredefort Dome World Heritage Site EMF and the Moqhaka EMF.

All known heritage sites in the Moqhaka Region should be documented and listed in a Municipal Heritage Register for submission to the Provincial Heritage Resources Authorities. This is a listing of the heritage resources in the Moqhaka Municipality which are considered to be conservation-worthy in terms of the heritage assessment criteria set out in Section 3(3) of the National Heritage Resources Act.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
Cemeteries	
C1: Upon reaching capacity, possibilities exist for the extension of the Viljoenskroon cemetery, immediately adjacent thereto. **C2, C3 & C4:** Proper landscaping and fencing of the existing cemeteries in Rammulotsi are considered a priority (C4 is located on open space erf 2659). **C5:** A substantially large new cemetery was established in the Northleigh precincts, with feasible extension possibilities further eastward on land partially owned by the Municipality (the Farm La Bella D' Afrique 254[**C7**]).	▪ **C1:** Extension of the Viljoenskroon cemetery should be preceded by a geotechnical report. ▪ **C1, C2, C3, C4 & C6:** Continuous maintenance of all existing cemeteries must be addressed by the Municipality to protect cemeteries against vandalism. The provision of ablution facilities and fencing of cemeteries is urgently required. ▪ **C5 & C7:** Extension of the newly established Northleigh cemetery should commence on areas not effected by a low groundwater table, characterised by the Viljoenskroon/ Rammulotsi environs. Possibilities exist for expansion on the Farms La Bella D' Afrique 254 (municipal owned) and Joffre 461 (privately owned [**C7**]).

[36] **VDWHS Environmental Management Framework & Moqhaka Environmental Management Framework 2013** (Source: Department of Environmental Affairs). The VDWHS is located within the North-West and Free State Provinces and falls under the jurisdiction of the Dr. Kenneth Kaunda District and JB Marks Local Municipalities in the North-West Province and the Fezile Dabi District and Moqhaka and Ngwathe Local Municipalities in the Free State Province.

	▪ **C6:** An existing old cemetery site, as part of the new residential extension on Northleigh, had to be formalised and will be accommodated on an erf for municipal purposes.
Other Social Amenities	
▪ An urgent need is identified for the establishment of a Fire Brigade Station in the Viljoenskroon/ Rammulotsi urban areas. ▪ Social amenities have, in the past, mostly been provided according to guidelines, gradually developed by the CSIR. However, older areas are mostly and often typical of under provision. More recently planned areas should reflect guidelines and standard provided by the CSIR, lately culminating in the *Guidelines for the Provision of Social Facilities in South African Settlements First Edition (August 2012)*. ▪ Current demands, especially relating to faith based organisations, resulted in a dramatic increase in land parcels for this land use, above and beyond what is specified in the guidelines. ▪ Despite the required provision, demands seems to be ever increasing with a much higher need than what is provided. In order to intercept this need, formal open spaces and other social amenities erven are being subdivided, thereby negating the ideal provision of social amenities – a practice that is deemed undesirable and not contributing to sustainable human settlements.	▪ Privately owned land in Rammulotsi (erf 3051), accessible and ideally located, is earmarked for a new Fire Brigade Station, subject to agreement with the land owner ▪ A policy/ bylaw is timely required: - whereby the continuing subdivision of valuable land earmarked for other social amenities should be prohibited, - to guide and assist faith based organisations in terms of requirements that need to be adhered to when applying for, and once a site has been obtained, and - unceasingly protect the incremental use of public open space and other social amenity premises for faith based organisations.

E: INDUSTRIAL AREAS

R5: *The continual expansion of Rammulotsi further east does not constitute an ideal "circular" urban form, characterised by incessant urban sprawl. Once urban expansion has reached the extreme eastern boundary of the urban area (deemed the proposed realignment of Road S1239), continuous sprawl must be intercepted and expansion considered in a western direction:*

- *constituting a circular compact and more sustainable urban form,*
- *limiting urban sprawl, intercepting the incessant encroachment on high potential agricultural land, and*
- *locating people closer to jab opportunists, amongst others, provided in the industrial area.*

STATUS QUO	FUTURE SPATIAL FRAMEWORK
Industries	
Viljoenskroon: The urban area is located in an extremely prominent agricultural region and industrial activities are mostly indicative hereof. A well established and accessible noxious industrial area is located on the western extremes of the urban area, comprising extension possibilities (I2). A well-developed light industrial area is situated to the west of Viljoenskroon (I4). As outlined, industrial development is consequently exclusively agricultural orientated. Senwes established a production plant in the industrial area, operating on a national base, producing fodder and pet food. **Rammulotsi:** Industrial and light industrial development in Rammulotsi is virtually none existent. A number of light industrial premises, not developing since its establishment, should be reconsidered for mixed commercial/ light industrial purposes.	▪ **I1**: A small number of light industrial erven, also at the taxi rank and municipal offices, must also be considered for a broader commercial and business application. ▪ **I2 & I3**: Future extension possibilities of the industrial area exist to the south east (I2) and east thereof (I3). ▪ **I2:** Flooding in the industrial area, mainly as a result of stormwater from the adjacently located cultivated areas, is a grave concern and proper stormwater planning and management for the area needs to be endeavoured to prevent future flooding and associated damages to infrastructure and buildings. ▪ **S5:** It is significant that industrial development closer to the Olifantsvlei should take cognisance of the importance of this ecological system and also associated flood lines.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
Extractive Industries (Mining)	
▪ Gold is actively mined by *AngloGold Ashanti* in the Vaal Reefs area (refer to Rural SDF Map). Three shafts are currently being mined and the mining operations are considered, by the company, as a long-term mining endeavour (refer to Vierfontein for more detail). ▪ **S3:** Gravel was exploited in Rammulotsi. Although the area has partially been rehabilitated and is no longer utilised for gravel exploitation. Sand exploitation also occurred on a low scale further south of the dumping site. These shallow excavated areas have been accommodated in open spaces with the establishment of the most recent extension. ▪ Ash dumps at Vierfontein, resulting from the former Vierfontein power station, is a recyclable resource and could be utilised for road construction purposes. Gravel is exceedingly scarce and may well be transported to urban areas for all construction and road building activities. ▪ Illegal sand winning in proximity of the Viljoenskroon/ Kroonstad road (endeavoured in the road reserve) must be ceased as water accumulates in these areas during high rainfall, posing a safety risk for residents.	

F : SURFACE INFRASTRUCTURE & BUILDINGS
Railway Lines and Stations
A railway line, adjacent the industrial area, links Viljoenskroon with Vierfontein. The former link to Klerksdorp, no longer exists. This railway line links to the main railway line between the Gauteng and Cape Provinces to the north of Kroonstad at the Westleigh station. The Viljoenskroon station is situated to the west, adjacent the industrial area. The railway line is predominantly utilised for the transportation of agricultural products, especially maize from the district and to a lesser extent goods produced by the concerned industries. Although provision was made for railway sidings to many industrial sites, only the Senwes, Allem Brothers, Omnia, Zennex and *Vrystaat Mielies* industries are linked to the railway line via a siding. Due to the cost related hereto, and the more prominent role of road transportation, the extension of sidings is not foreseen. The Viljoenskroon station is thus still functioning, but it operates on a considerable lower frequency than in the past.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
Landfill Sites	
D1: The current landfill site has reached full capacity; relocation of the site is imminent.	▪ **D2:** Following investigations (as a consequence of funding granted to the Municipality), an area was identified to the south-east of

STATUS QUO	FUTURE SPATIAL FRAMEWORK
Landfill Sites	
D: Refer to Vierfontein Map: Vierfontein, approximately 23 km from Viljoenskroon, comprises an adequate landfill site for current and envisage future use. **D: Refer to Renovaal Map:** Household refuse generated at Renovaal is dumped at an illegal and unlicensed site in close proximity of the village and also in close proximity of the Renoster River.	Rammulotsi (on the Remainder of the Farm Northleigh 422, owned by the Municipality). The site could be considered for a future landfill site, subject to the following: - Ultimately additional land, Subdivision 1 of the Farm Vlakvlei 417, must be acquired for the long term extension of the site. - Purchasing of the farm is additionally deemed significant to ensure a more direct access to the foreseen landfill site and the southern extremes of the recent Northleigh extensions. - Extension of the landfill site must be further southeast and not (north) closer to the Northleigh extension. - To prevent the location of a landfill site in a residential area, the Rammulotsi precinct must not expand further south. - Future residential extension is proposed north-east on the Farms Seubring 153, La Bella D' Afrique 254 (owned by the Municipality), Subdivision 1 of Biesievlei 497 and Marne 421 (privately owned). - A 500 m buffer must be retained from the last extension of Rammulotsi (Extension 10) to the boundary of the landfill site. - F3: Valuable land negated by this buffer could purposefully be utilised for urban agriculture practises; especially with it being high potential agriculture land.

Table 13

Bulk Services Provision Viljoenskroon / Rammulotsi Urban Area

(Source LMV Engineers, 2017)

Viljoenskroon
Water Purification
▪ Raw water supply: Renoster River, supplemented by Vaal River, in need of upgrading ▪ Purification capacity is not adequate ▪ Additional reservoir capacity is required ▪ New bulk water supply pipelines and pump stations will be required for future urban extensions
Waste Water Treatment Works
▪ Residential developed is not allowed within 500 m of a waste water treatment plant ▪ WWTW capacity will have to be increased to allow for new extensions ▪ Ext 9 requires pump station
Electricity
▪ Eskom provides bulk for distribution by the Municipality in Viljoenskroon ▪ Distribution in Rammulotsi (excluding Ext 5) by Eskom directly ▪ Notified maximum demand from Eskom is 5 MVA (Viljoenskroon only), current load is 5,5 MVA (winter) signalling imminent upgrading ▪ Bulk is not available for new developments

Infrastructure Services

All urban areas were analysed in an attempt to identify shortfalls in infrastructure service delivery and to identify areas for eradication of backlogs or upgrading of services, the following categories were thus applied:

- Areas in the process of establishment (green)
- Areas established, unoccupied, without services (red)

- Areas established, occupied, with rudimentary services
- Areas established, unoccupied, with services, partly or completely (yellow)

Infrastructure Service Provision:	
Water Network	
Rammulotsi	**Viljoenskroon**
▪ Provided with water network ▪ Extension 8: Established, partially occupied, serviced ▪ Extension 9: Established, not occupied, serviced (not enough water pressure) ▪ Extension 10: Established, not occupied, no services	▪ Provided with water network ▪ Extension 14: Established, not occupied, partially serviced (vandalised)
Sewer Network	
▪ Provided with sewer network ▪ Extension 8: Established, partially occupied, serviced ▪ Part of extension 8: Established, occupied, no services ▪ Extension 9: Established, not occupied, serviced (not functional requires pump station) ▪ Extension 10: Established, not occupied, no services ▪ Industrial area: Established, partially occupied, partially serviced (suction pits installed)	▪ Provided with sewer network ▪ Extension 14: Established, not occupied, partially serviced
Electricity Network	
▪ Eskom service provider (Excluding Ext 5) ▪ Extension 8: Established, partially occupied, partially serviced ▪ Extension 9: Established, not occupied, no services ▪ Extension 10: Established, not occupied, no services	▪ Municipality service provider ▪ Provided with electricity network ▪ Extension 14: Established, not occupied, partially serviced

Regional Road Network and Future Access

Road Requirements

- **M1**: The provincial road P15/1 and P15/2 from Kroonstad to Klerksdorp extends through the study area from north to south.
- The road between Viljoenskroon is in a derelict condition and repair thereof identified as an extremely urgent priority.
- **M2:** Road P33/2 between Viljoenskroon and Bothaville and Road P33/3 between Viljoenskroon and Potchefstroom stretches delineates the northern extremes of the Urban Fringe.
- Upgrading and repair of the road network is deemed exceedingly urgent and the conditions of certain sections (especially between Viljoenskroon and Kroonstad), are becoming unsafe and unusable.
- Due to the significance of the P15/2 (between Kroonstad/ Viljoenskroon and Orkney Road) and P33/2 (Potchefstroom/ Bothaville Road) provincial roads in a national context, the applicable building restriction area adjacent thereto, should be maintained in the future.

Access Requirements

There are three existing and direct access routes to Viljoenskroon (A1, A2 & A3) and three existing and direct accesses to Rammulotsi (A4, A5 & A6). Secondary Road S987 also provides a direct access to the industrial area and further to Viljoenskroon from the P33/2 provincial road.

- **A11:** An illegal and exceedingly unsafe access is taken via Road S1239 unto road P15/1. Former planning saw Road S1239 being realigned and linked with the main access road into Rammulotsi at A4 (stretching adjacent to the partially rehabilitated landfill site (S3). The latter trajectory was, however, never constructed. The concerned major road network provides adequate and direct access to the respective residential areas and the industrial area. No future major roads are therefore proposed.
- **A7 & A12:** Additional access from road S1239 will be required to provide access to the newly planned Northleigh precincts.
- **A8 & A9:** The proposed realignment of Road S1239 will necessitate additional access unto the Potchefstroom Road (P33/3) and the Vredefort roads, respectively.
- **A9:** An additional access will also be required in the near future on the Vredefort Road (Road S83) to ensure:
  - a more direct access to the future residential areas, further east (R3).
  - a more direct access of the agricultural hinterland to Viljoenskroon and the industrial area, diverting heavy traffic from the Rammulotsi neighbourhood.
- **A10:** Obtainment of Subdivisions 1 and 2 of the Farm Vlakvlei 417 will imply that the newly planned Northleigh precincts and the medium-term residential extension of Rammulotsi (R2) will be provided with feasible access to the Vredefort Road (Road S83) and Viljoenskroon.

A : CORE	
STATUS QUO	FUTURE SPATIAL FRAMEWORK
The Vals River, several attributes and significant wetland areas ("Jas se Spruit"), drain through the rural and urban area and serve as main source for raw water thought an out stream storage dam. Water from the Vals River is pumped into an "out of river" storage dam to ensure potable water during periods of low rainfall.	▪ Optimal development and utilisation of the Vals River riparian and water sources in rural settings, not compromising the outstanding universal value thereof and unduly impairing the safe, undisturbed and quiet enjoyment of the area, must be considered. ▪ Significant surface water features, as well as its tributaries, must be regarded as sensitive to activities that might further deteriorate their quality. ▪ The areas within 32 m and 100 m of water courses, as defined in the National Water Act, and within 500 m of wetlands should be regarded as sensitive and not earmarked for development.

B : BUFFER	
STATUS QUO	FUTURE SPATIAL FRAMEWORK
The water course of "Jas se Spruit" and other small vlei areas, traverse through the urban area. The riparian to these areas are deemed of extreme environmental significance and controlled development and limiting pollution thereof, are considered as substantial priorities.	▪ The Vals River and Jas se Spruit, its tributaries, constructed dams and associated riparian areas thereto, are paramount natural resources and should be protected to minimise pollution thereof. ▪ The areas within 32 m and 100 m of water courses, as defined in the National Water Act, and within 500 m of wetlands are regarded as sensitive and development in these areas will not be permitted. ▪ **S4:** Riparian areas adjacent to "Jas se Spruit" need to be incorporated in an open space system, not considered for further development.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
A sensitive spruit and vlei system, generally known as "Jas se Spruit" extends through the urban area and needs to be incorporated in an open space system, not considered for further development.	- Activities such as urban agriculture and sport fields may be considered should they not impact on specific identified sensitive areas. - Proper management of the riparian must be implemented to intercept misuse and pollution of the area. ▪ **S3:** Either rehabilitation and/ or safeguarding (should the existing sewerage ponds be used as fish hatcheries) of the decommissioned sewer works is considered as a matter of urgent importance. ▪ The current condition poses pertinent health and safety risks for the community.

C : AGRICULTURAL AREAS	
STATUS QUO	FUTURE SPATIAL FRAMEWORK
Urban Agriculture	
A need existed for additional land for commonage for the purposes of communal grazing and small-scale farming, and as a result, the Council purchased the Farms Stella 762, Erfenis 459 and Subdivision 1 of the Farm Vogelvlei 457 with a Department of Rural Devolvement and Land Affairs grant.	▪ The long-term development of the urban area may see the development of Subdivision 1 of the Farm Vogelvlei 457, considered to be the future hinterland of larger urban area, for residential purposes. ▪ Proper fencing of the areas is deemed as a matter of pertinent importance.
Commonage	
F1: Although the existing town lands of Steynsrus (west of Matlwangtlwang, on the Farm Mededeel 460) is presently utilised for grazing purposes, it is not adequate in meeting the community's demands.	▪ **F1** Remaining portions of the municipal town lands and the Farm Mededeel 460 are not earmarked for residential purposes, (R3 & R4) ▪ **F3:** Portions of Subdivision 1 of the Farm Vogelvlei 457, not earmarked for residential development (R2), are identified for the "One Household One Hectare" programme.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
F2: the Farms Stella 762, Erfenis 459 and Subdivision 1 of the Farm Vogelvlei 457 (now **R2**) forms part of the municipal land that were additionally obtained for agricultural related and commonage practices. Apart from small land parcels associated with the Steynsrus Station, there are neither small farms nor small holdings identified for incorporation within the earmarked Urban Fringe.	▪ **F4:** The Farm Onvergun 458 is owned by the Mabaso Communal Property Association and managed as a communal farm. ▪ **F5:** Portions of the Remainder of the Farm Vogelvlei 457, not considered for urban development (R1) offers ideal land for urban agriculture activities or the "One Household One Hectare" programme. ▪ The Farm Jaskraal 91, south of the urban area, must be considered for commonage purposes. Strong water resources on the property renders it ideal for the latter purpose. ▪ Sustainable and co-ordinated commonage projects should be developed to ensure the productive utilisation of commonage land in a manner responsible towards the environment.
Agricultural Land Identified for Urban Development or Smallholdings	
Land parcels indicated in the table below are earmarked for inclusion within the Urban Fringe pertaining to this SDF and the LUS to ensure management thereof by the Municipality, according to land use control measures, also pertaining to the LUS. Exclusion of these land parcels from agricultural land is therefore evident. The identified small land parcels are mostly associated with the Steynsrus Station.	
▪ The Farm Bloemhof 1011 ▪ Subdivision 6 of the Farm Benoni 662 ▪ Subdivision 1 and Remainder of the Farm Steynsrust Siding 810 ▪ The Farm Saamwerk 989	▪ Subdivision 1 and Remainder of the Farm Steynsrust Creamery 1010 ▪ Subdivision 1 to 5 and Remainder of the Farm Op De Tijd 382 ▪ The Farm Ruhr 873 ▪ The Farm Otawi 855 ▪ The Farm Jaskraal 91

D : URBAN RELATED
Urban Fringe
The "Urban Fringe"[37] represents the outer limits or boundary for urban development. The proposed Urban Fringe should not be considered as an exact line but as a conceptual boundary to prevent further urban extension. The principle for identifying an Urban Fringe is primarily to discourage continuous urban sprawl and to promote integration and more compact towns and urban areas. The Urban Fringe of the larger town area is determined as follows: ▪ The boundary of the former area of jurisdiction, which is also the existing town lands, determines the Urban Fringe to the east south and west, ▪ Recent extensions further north required an extended Urban Fringe to include the remainder and subdivision 1 of the Farm Vogelvlei 457, and ▪ Apart from small land parcels associated with the Steynsrus Station (indicated above), there are neither small farms nor small holdings identified for incorporation within the earmarked Urban Fringe.
Infill, Densification and Corridor Development
Infill planning of land between the residential precincts of Matlwangtlwang (excluding undevelopable vlei areas,) resulted in urban area being fairly integrated with limited opportunities for infill planning. In addressing a more sustainable urban form, densification, especially through higher residential densities and mixed use developments, associated with significant transportation arterials, remains a viable alternative in the larger urban area. The tendency towards continuing decentralisation of workplace locations is complicating the creation of "compact cities". Although compaction may be achievable as a means of increasing density, it is suggested that the predominant pattern in South Africa should be the "corridor city". Strategies need to be identified to attract decentralising activities toward existing public transport corridors (*CSIR, 2000: Human Settlement Planning and Design, "Red Book" also the source of the ensuing figure: "corridor densification option"*). Urban density is deemed significant in view of the following: - Densification is deemed a development objective to pursue a more compact and viable urban form, thereby facilitating medium to higher densities by means of infill development and densification. - Predominantly low densification has taken place in Steynsrus, implying possibilities for growth through, amongst other, densification.

[37] The Moqhaka Land Use Scheme defined the Urban Fringe as a demarcated line portrayed in the approved Municipal Spatial Development Framework that separates urban areas from rural areas to establish a defined limit, beyond which urban development, must not be permitted to protect land for natural resources, agriculture, conservation and open space use.

Urban Fringe
- Densification is generally feasible on existing properties and new developments and may well be accompanied by an increased number of units and/or population thresholds, as outline in the Moqhaka Land Use Scheme. - Residential development in Steynsrus must be prioritised with the focus on densification and infill development rather than expansion.

Table 14

Summary of Current Housing Tendencies: Steynsrus / Matlwangtlwang Urban Area

(Source: LMV, 2017)

	Erven			**Erf & Land Requirements (Determined By Council)**
Residential Area	**Residential Erven Occupied**	**Residential Erven Unoccupied**	**Total Residential Erven**	
Steynsrus	228	174	**402**	-
Matlwangtlwang Extension 3	2 258	804	**3 062**	-
TOTAL	**2 486**	**978**	**3 464**	**-**

STATUS QUO	FUTURE SPATIAL FRAMEWORK
Residential	
Steynsrus: Development in Steynsrus is extremely dormant. Only 228 of the 348 residential sites are occupied. Unoccupied erven were recently densified and 18 large erven were converted into 72 smaller erven. **Matlwangtlwang:** Matlwangtlwang experienced sporadic growth considering that approximately 2 606 erven developed during the past 10 years. However,	▪ **R1:** Extension 3 was recently concluded (erven pegged and township register opened), comprising 804 residential erven, is now utilised to relocate informal l settlement thereto – provision of services in the area is deemed critical. ▪ **R2:** Council land, adjacent to the Kroonstad/ Bethlehem (M1) and Edenville Roads (M3), is deemed to be exceedingly well-located for immediate residential extension.

STATUS QUO	FUTURE SPATIAL FRAMEWORK
most of the erven are still vacant and 3 small informal settlements (comprising approximately 150 structure) are prevalent: - adjacent to an old quarry in the western periphery of the residential precinct (G2), - in the road reserve adjacent to the Kroonstad/ Bethlehem road (M1) - At the main entrance to Matlwangtlwang (single row erven - at A3) Long term expansion of the Matlwangtlwang precinct should preferably not occur further south and emphasis is placed on more accessible developments, further north. Additional land (the Remainder and Subdivision 1 of the Farm Vogelvlei 457) has been required for future residential development to the north, adjacent to and across the Kroonstad/ Bethlehem provincial road (M1).	▪ Development on opposite sides of the Kroonstad/ Bethlehem road and across the existing Matlwangtlwang precincts, will necessitate pertinent traffic measure to enhance pedestrian safety. ▪ **F3:** long-term development of the urban area will see the partial development of Subdivision 1 of the Farm Vogelvlei 457, considered to be the future hinterland of larger urban area, for residential purposes. ▪ A future access to this foreseen extension is proposed at A5. ▪ **R3:** Long-term residential extension of an approximate 600 erven could in future be considered to the west of the Matlwangtlwang precinct (R3). ▪ **R4:** Long-term residential extension of a further and approximate 300 erven is proposed to the south of Matlwangtlwang. ▪ Residential erven in reserve, although not serviced, signal that existing informal settlements could be relocated and all informal settlements resolved.
Central Business District	
Steynsrus: A well-defined CBD, comprising of 49 businesses, exists in Steynsrus extending linear to the north east along the main access road from the Kroonstad/Bethlehem Road and to the north west along the main access road between Steynsrus and Matlwangtlwang and to the Southwest, adjacent to King Edward Street, linking with the Senekal Road.	▪ Extension of the existing CBD of Steynsrus is proposed to the north-east, towards Matlwangtlwang in an attempt to promote integration along the link road (A2) between the two precincts. ▪ The road, Haasbroek Street, currently functions as an ill-defined corridor with limited businesses establishing adjacent thereto. ▪ Buildings in the area, currently owned by the Municipality, could also be utilised for community activities. ▪ **R1/ A5:** Urban extension further northward (on the Remainder of the Farm Vogelvlei 457) provided for well-located business premises

STATUS QUO	FUTURE SPATIAL FRAMEWORK
Matlwangtlwang: Apart from the town entrance, a defined business centre or node does not exist in Matlwangtlwang. Although, business sites along the main access at the entrance to Matlwangtlwang, are only partially developed. Several neighbourhood shops are dispersed throughout the area. DRDLR *Development Potential in Urban Settlements Report* (2014) assessment: ▪ Urban Growth Potential – Very Low ▪ Economic Potential - Very Low *Development on opposite sides of the Kroonstad/ Bethlehem road, and across from the existing Matlwangtlwang precincts, will necessitate pertinent traffic measure to enhance pedestrian safety.*	deemed necessary, as commuting distances to existing businesses, especially for pedestrians, are being extended. ▪ **T2:** A new and more appropriately located taxi rank was additionally earmarked for the new precinct. ▪ This provision was further necessitated by informal disembarking points at extremely unsafe locations on the Kroonstad/Steynsrus road (M1) posing pertinent safety risks for residents, commuters and the traveling public. ▪ Although several business premises and small business nodes are provided in Matlwangtlwang, growth is deemed exceedingly latent in the precinct. ▪ It should possibly be viewed against the identified "very low" urban growth potential of the precinct and Steynsrus in general**.** ▪ **M1, M2 & M3:** The intersection at the Senekal/Edenville and Bethlehem/Kroonstad Roads may offer limited commercial opportunities as part of the foreseen long term residential development (R2). ▪ Accessibility may be difficult in view of the fact that these roads carry substantial traffic volumes. A more suitable access is proposed on the Edenville road (M3) at A8.
Commuting Nodes	
T1: The taxi terminus, originally located in Matlwangtlwang, adjacent to primary link road (A2) between Steynsrus and Matlwangtlwang, has never been developed. It may well, in view of its ideal location at the entrance of Matlwangtlwang, be utilised for business/commercial related development.	▪ **T1:** The former taxi terminus may well be utilised for business/ commercial related development. ▪ **R1/ A5/ T2:** Urban extension further northward (on the Remainder of the Farm Vogelvlei 457) resulted in well-located business premises and a new and more appropriately located taxi rank (T2) –

STATUS QUO	FUTURE SPATIAL FRAMEWORK
Long distance taxis are dropping passengers off adjacent to the Steynsrus/ Kroonstad Road (M1). Neither a formal site nor facilities are established and the road reserves are used as drop off zone, posing pertinent safety risks for residents, commuters and the traveling public.	development of the rank, in view of current illegal and unsafe commuter activities, is deemed a priority. ▪ **T3:** The corner of Haasbroek and Read Streets in Steynsrus is utilised as a pedestrian node for short distance commuters to Matlwangtlwang. ▪ However, a more ideal location, with facilities, approximately 200 m from the above site, should preferably be upgraded to a formal pick-up point and sheltered facilities for commuters.
Urban Open Spaces	
S2: Although in derelict condition and poorly maintained, Steynsrus comprises a developed sport terrain and adjacent show grounds area (no longer in use). **S1:** The sport terrain in Matlwangtlwang is only utilised as a soccer field and a need exists to further develop the terrain to accommodate multi-purpose courts and spectator stands to enhance its function as a collective focal point. Various formal and functional open spaces are provided; especially in the more recent extensions in Matlwangtlwang, adhering to the CSIR's *Guidelines for the Provision of Social Facilities in South African Settlements First Edition (August 2012)*, but are mostly undeveloped and unsatisfactory maintained.	▪ Identification of parks in Matlwangtlwang that may well be developed for sport and recreation purposes, is imperative. ▪ **S1:** The existing sport terrain in Matlwangtlwang must be further developed by providing multi-purpose, all weather courts and spectator stands. ▪ **S3:** An exceedingly large open area in Matlwangtlwang, adjacent to Jas se Spruit, being the result of decommissioned oxidation ponds, ought to be redeveloped as a neighbourhoods sport terrain and also provide in suitable areas for urban agriculture activities. ▪ **S4:** Riparian areas adjacent to "Jas se Spruit" need to be incorporated in an open space system, not considered for further development. - Activities such as urban agriculture and sport fields may be considered should they not impact on specific identified sensitive areas. - Proper management of the riparian must be implemented to intercept misuse and pollution of the area.

STATUS QUO	FUTURE SPATIAL FRAMEWORK

Continuous subdivision of functional and formal open spaces to accommodate social amenities and business land uses must be prohibited. Several smaller functional open spaces in Matlwangtlwang, are not developed and proposed for cleaning, levelling and gravel surfacing to establish informal sports areas. Reluctance in the development of functional open spaces result in these premises becoming derelict and problematic for the surrounding community, often illegally dumping refuse on the premises and setting fire thereto.

Public Open Spaces:

- Continuous subdivision of functional and formal open spaces to accommodate social amenities and business land uses must be prohibited.
- A policy relating to numerous applications by faith base institutions is required, ensuring that development of properties occur within a realistic timeframe, and in failing to do so, land must revert back to the Municipality.
- In supporting the above, several smaller functional open spaces in all urban areas, are not developed and are proposed for levelling and gravel surfacing to establish informal sports areas. Reluctance in the provision of functional open spaces result in these premises becoming derelict and problematic for the surrounding community, often illegally dumping refuse on the premises and setting fire thereto.
- Provision of open spaces should be maintained according to CSIR Guidelines for the Provision of Social Facilities in South African Settlements – Medium Towns (First Edition: August 2012).
- Total provision of functional and formal open spaces has to be at least 0.5 ha/ 1 000 people, 40 % of this allocation is for strategic (regional) and district facilities and 60 % for community, urban and neighbourhood parks, play lots, etc.

Resorts and Tourism

Although the area is not considered as a primary tourist destination, it is increasingly becoming a favourite weekend destination. The hunting and guesthouse industries displayed an exceedingly rapid growth the past few years. Significant and formal recreation areas are, unfortunately, absent in the Steynsrus area.

Vals River

Due to the significant role the Vals River fulfils in the region, in providing potable water, everything possible must be done to restrict the pollution of these sources to the minimum. Riparian areas must be protected against injudicious use on account of their ecological aesthetic or recreational value taking amongst other, cognisance of:

<table>
<tr><th>STATUS QUO</th><th>FUTURE SPATIAL FRAMEWORK</th></tr>
<tr><td colspan="2">
- Leisure Residential and Resort Developments according to Free State Province, Department of COGTA's Development of Rural and Peri-Urban Areas Guidelines (2006),
- The Free State Province Biodiversity Plan (2015),
- Implementation of the Strategic Objectives and Management Zones of the Moqhaka EMF, and
- All development applications have to be assessed in terms of the management zones proposed in the Moqhaka EMF.

Heritage Considerations
The Free State Province played a significant role in the Anglo Boer War, resulting in a number of historically important tourist attractions. The Koppies area, for example, is becoming well known for various battlefields as tourist attractions. These tourist attractions of historical importance include amongst other the Sarel Cillier's Farm (between Steynsrus and Kroonstad).

All known heritage sites in the Moqhaka Region should be documented and listed in a Municipal Heritage Register for submission to the Provincial Heritage Resources Authorities. This is a listing of the heritage resources in the Moqhaka Municipality which are considered to be conservation-worthy in terms of the heritage assessment criteria set out in Section 3(3) of the National Heritage Resources Act.
</td></tr>
<tr><td colspan="2">Cemeteries</td></tr>
<tr><td>Steynsrus
C1: The Steynsrus cemetery comprises adequate capacity and is suitable for long term expansion (subject to geotechnical investigations).

Matlwangtlwang
C2: The existing cemetery in Matlwangtlwang reached its full capacity and is no longer utilise for burials.</td><td>Following detailed geotechnical investigations and feasibility studies, two new cemeteries were identified:
▪ C3: In the vicinity of the existing Steynsrus sport terrain (S2), although long term extension is limited due to clay soils and low ground water levels.
▪ C4/ R2: On Subdivision 1 of the Farm Vogelvlei 457, comprising capacity for the medium term. Underlying rock formations prohibits further development of the site.
▪ Investigations must commence in the near future should the above cemeteries reach their capacity and an alternative cemetery needs to be identified. Possibilities exist at:</td></tr>
</table>

STATUS QUO	FUTURE SPATIAL FRAMEWORK
	- F4 being the remainder of Subdivision 1 of the Farm Vogelvlei 457, not considered for residential development, - F5: Limited space is available north of the R1 extension. ▪ Continuous maintenance and protection against vandalism of unused cemeteries should be considered as a key priority. ▪ The provision of ablution facilities and fencing of cemeteries is urgently required.
Other Social Amenities	
Social amenities have, in the past, mostly been provided according to guidelines, gradually developed by the CSIR. However, older areas are mostly and often typical of under provision. More recently planned areas should reflect guidelines and standards provided by the CSIR, lately culminating in the *Guidelines for the Provision of Social Facilities in South African Settlements First Edition (August 2012)*. ▪ Current demands, especially relating to faith based organisations, resulted in a dramatic increase in land parcels for this land use, above and beyond what is specified in the guidelines. ▪ Despite the required provision, demands seems to be ever increasing with a much higher need than what is provided. In order to intercept this need, formal open spaces and other social amenity erven are being subdivided, thereby negating the ideal provision of social amenities – a practice that is deemed undesirable and not contributing to sustainable human settlements.	▪ A policy/ bylaw is timely required: - whereby the continuing subdivision of valuable land earmarked for other social amenities should be prohibited, - to guide and assist faith based organisations in terms of requirements that need to be adhered to when applying for, and once a site has been obtained, and - unceasingly protect the incremental use of public open space and other social amenity premises for faith based organisations.

E: INDUSTRIAL AREAS	
STATUS QUO	FUTURE SPATIAL FRAMEWORK
Industries	
No formal industrial area or sites are provided in Steynsrus due to the fact that there is no large-scale industrial development at present. A limited number of service industries, of which the Salem Pottery (although activities have largely been downscaled) is the most significant, exist in the CBD.	▪ **A2:** If a need arises, a suitable commercial and service industrial premises should be located adjacent to the access road between Matlwangtlwang and Steynsrus. ▪ **I1:** Light industrial sites in Matlwangtlwang are concentrated next to the main access to Matlwangtlwang that are only partially developed. ▪ **I2:** Agricultural related industrial development is feasible in the vicinity of the Steynsrus station. Similar activities have since been established in the area.
Extractive Industries (Mining)	
G1, G2 & G3: Gravel, mostly related to road building program, was exploited to the west and south of Matlwangtlwang. **G1:** An active gravel burrowing pit was established in close proximity of the recently constructed waste water treatment plant [s] and is exploited solely for municipal use.	▪ **G2 & G3:** Rehabilitation of previously exploited gravel quarries, now incorporated in the urban area, should continuously be addressed until the areas could be converted into informal neighbourhood sport terrains/ parks. ▪ The un-rehabilitated nature thereof, poses pertinent health and safety risks for the community; especially for an informal settlement on the western periphery of the Matlwangtlwang precinct.

F: SURFACE INFRASTRUCTURE & BUILDINGS
Railway Lines and Stations
The main railway line between Bethlehem and Kroonstad, still an active line, delineates the northern boundary of the urban area. The Steynsrus station is, however, not utilised in view of it being appallingly vandalised. Limited agricultural related activities are present in the area.
Landfill Sites
D: The existing landfill site has recently been enlarged and is of adequate capacity to serve the larger area for the longer term. New “cells” should, however, timely be excavated to ensure sustainable utilisation thereof.

Table 15

Bulk Services Provision Steynsrus / Matlwangtlwang Urban Area

(Source LMV Engineers, 2017)

Water Purification
▪ Raw water supply: Vals River piped to storage dam ▪ Purification capacity is not adequate ▪ Additional reservoir capacity is required ▪ New bulk water supply pipelines and pump stations will be required for future urban extensions
Waste Water Treatment Works
▪ Residential developed is not allowed within 500 m of a waste water treatment plant ▪ WWTW capacity will have to be increased to allow for new extensions ▪ Pump stations and pipelines will be required to allow for new extensions
Electricity
▪ Eskom provides bulk for distribution by the Municipality in Steynsrus ▪ Distribution in Matlwangtlwang by Eskom directly ▪ Notified maximum demand from Eskom is 1 MVA (Steynsrus only), bulk is available for future developments

Infrastructure Services

All urban areas were analysed in an attempt to identify shortfalls in infrastructure service delivery and to identify areas for eradication of backlogs or upgrading of services, the following categories were thus applied:

- Areas in the process of establishment (green),
- Areas established, unoccupied, without services (red),
- Areas established, occupied, with rudimentary services (brown for sewer, that will imply buckets and blue for water, that would imply standpipes),
- Areas established, unoccupied, with services, partly or completely (yellow).

Infrastructure Service Provision:	
Water Network	
Matlwangtlwang	**Steynsrus**
▪ Provided with water network ▪ Extension 2: Established, occupied, no services ▪ Extension 3: Established, not occupied, no services	▪ Provided with water network
Sewer Network	
▪ Provided with sewer network ▪ Extension 2: Established, occupied, no services ▪ Extension 3: Established, not occupied, no services ▪ Subdivision 7 & Portion of old town: Established, occupied, no services, (VIP system in use)	▪ Provided with sewer network
Electricity Network	
▪ Eskom service provider ▪ Provided with electricity network ▪ Extension 2: Established, occupied, no services ▪ Extension 3: Established, not occupied, no services	▪ Municipality service provider ▪ Provided with electricity network

Regional Road Network and Future Access
Road Requirements
▪ Apart from the provincial primary road network, between Kroonstad and Bethlehem (M1) and Steynsrus and Senekal (M2) and the secondary provincial road network to Edenville (M3) and Ventersburg (M4), no other significant roads are provided.
Access Requirements
▪ **A5:** Access from the Kroonstad/ Bethlehem Road (P23/1) was granted by the Department of Roads, Transport and Police allowing direct access to Extension 3 and also serve as a more direct access to the Matlwangtlwang precinct. ▪ The configuration is deemed a high priority to revolve existing informal and exceedingly dangerous accesses from the provincial road by commuters from Matlwangtlwang. ▪ A cross intersection must be established at this intersection, once the northern hinterland (R2) of Matlwangtlwang is developed.

Regional Road Network and Future Access
▪ **A6:** Additional accesses, from the Ventersburg secondary road (M4) were provided to Extension 2. ▪ **A7:** A similar access to the above, will have to be provided should a further residential extension be established at R4. ▪ The construction of a link roads, across the spruit, between the existing Matlwangtlwang Extension 2 and future extensions (R4) will be required to ensure amalgamation between the two southern and northern precincts of Matlwangtlwang. ▪ **A8:** Development of the northern hinterland, adjacent to the Edenville Road (M3), will necessitate a new access to the provincial road. ▪ **A9:** Development at R4 and R3, although deemed long term, will require a higher order collector road between the Ventersburg road (at A7) and the Kroonstad Road (at A5) to contribute to the feasible integration of the various extensions of the Matlwangtlwang precincts.

In addition to the existing formal urban areas, several residential areas and proclaimed town areas are situated in the Moqhaka Region with reference to Renovaal and Vierfontein. Renovaal was established during 1974, adjacent the Vaal River, with the intention to provide residence in the proximity of the gold mining activities in the North West Province. The town was also later marketed as a leisure residential area with recreation potential at the confluence of the Renoster and Vaal Rivers. Development of the town is, however, extremely latent and only the proposed first phase of the town was established with a limited number of properties comprising residences. According to Proclamation No. 167 of 1975, the concerned area represented by General Plan SG No. 459/1974, was proclaimed a township under the name Renovaal.

The main purpose of the initial Vierfontein power station was to promptly assist in meeting the heavy demand for power that was developing in the goldfields of the Free State and in the Klerksdorp area in the middle forties. It was in operation for nearly 38 years, being decommissioned in November 1990. The power station plant was sold as scrap and the buildings and cooling towers demolished. Vierfontein (referred to as "Vierfontein South") is also a proclaimed town. The area was initially developed to provide residence for workers at the adjacent mine and electricity power station and was owned by Eskom. After mining activities ceased and the power station discontinued, a township establishment was done to formalize the existing town area during 1993. According to Proclamation No. 35 of 1995 (Provincial Gazette of 24 February 1995), the concerned area represented by General Plan SG No. 786/1993, was proclaimed a township under the name Vierfontein. The individual properties were sold and the majority of the inhabitants of Vierfontein are retired residents with a limited number of inhabitants that are employed in Viljoenskroon.

To the north of the town Vierfontein, a sectional title scheme was established and is referred to as "Vierfontein North". As in the instance of Vierfontein, this sectional title scheme also developed to provide residence for workers at the Vierfontein mine and power station, but most of the current inhabitants are also retired. The area was developed by the Dutch Reformed Church who was the initial property owner of the concerned farms. The concerned farms are currently the property of Vierfontein Developers Group Scheme, who is also the current home owners association.

The Vaal Reefs hostel complex subsequently exists adjacent the Vaal River and in close proximity of Viljoenskroon. The hostels were developed by AngloGold who is the property owner of the concerned farms and provide residence to mine workers of the company. Although mining activities ceased on the Free State side of the Vaal River, the complex still exists and provides housing to approximately 9 000 residents. An informal settlement subsequently developed adjacent the Vaal Reefs hostels, consisting of approximately 720 residents.

Table 16

Summary of Current Housing Renovaal and Vierfontein Rural Villages & Vaal Reefs Mining Area

(Source: LMV, 2017)

Residential Area	Hostel Units / Temporary Structures	Residential Erven Occupied	Residential Erven Unoccupied	Total Residential Erven	Estimated Population
Vierfontein North (Sectional Title Scheme)	-	96		96	449
Vierfontein South (Approved Township, General Plan SG No 786/1993)	-	182	19	201	600
Renovaal (Approved Township, General Plan SG No 459/1974)	-	37	302	339	120
Vaal Reefs ▪ Hostel Units at Kopanang and Great Noligwa Mine ▪ Temporary Structures	 3 000 180	 -	 -	 -	 9 000 720
TOTAL	**3 180**	**315**	**321**	**636**	**10 889**

Vierfontein

CURRENT SPATIAL FRAMEWORK	FUTURE DEVELOPMENT FRAMEWORK
Vierfontein North: The concerned sectional title scheme is referred to as Vierfontein North and comprises 96 residential units and other social amenities.	▪ Future extension of the precinct is not envisaged. ▪ The prepared Moqhaka Land Use Scheme includes the precinct in an attempt to ensure appropriate land use control and the feasible management and future development of the urban area. ▪ Further liaison and co-operation is required between the private property owners and the Moqhaka Municipality to ensure effective management of the areas.

CURRENT SPATIAL FRAMEWORK	FUTURE DEVELOPMENT FRAMEWORK
Vierfontein South: The town Vierfontein comprises 201 residential erven of which 182 are developed. Various other land uses were allocated to erven during the formal township establishment process. These erven include: ▪ Motel and retirement village : 3 erven ▪ Businesses : 5 erven ▪ Post office : 1 erf ▪ Municipal purposes : 5 erven ▪ Clinic : 1 erf ▪ Private open spaces : 2 erven ▪ Public open spaces : 1 erf	
Engineering Services: ▪ The area is completely serviced by means of electricity, water and sewer networks. ▪ Bulk water supply is obtained from the water purification works of Vierfontein South and the sewerage treatment plant is also jointly utilised by the Vierfontein town and the sectional title scheme based on an agreement. ▪ The management and the provision of bulk and infrastructure services in Vierfontein are administrated by Vierfontein Developers CC. **Road Network:** ▪ Vierfontein is accessible from the provincial road network via the Viljoenskroon/ Orkney Road (P15/2). ▪ **A1:** the precinct is more directly accessible via a tarred secondary provincial road, Road S632 linking onto the Viljoenskroon/ Bothaville Road (Road P33/2).	

Renovaal

CURRENT SPATIAL FRAMEWORK	FUTURE DEVELOPMENT FRAMEWORK
Development of Renovaal is extremely latent. The town comprises a total of 339 residential erven. Since the establishment of the town during 1974, only 37 of the 339 residential erven were developed. Various other erven were provided for the development of a wide range of amenities normally associated with town development, but were never developed. These erven include the following: ▪ Businesses : 2 erven ▪ Caravan park : 1 erf ▪ Garage business : 1 erf ▪ Hotel : 1 erf ▪ Boat club : 1 erf ▪ Private open spaces : 3 erven ▪ Municipal purposes : 6 erven ▪ School : 1 erf ▪ Government : 1 erf	▪ **R1 & R2:** Apart from limited extension possibilities adjacent to the Renoster River (R2), infill opportunities (R1) exist to further extend the Renovaal Village and is supported by the Municipality. ▪ Further development of these areas must favourably be considered, but subject to availability of services. ▪ The prepared Moqhaka Land Use Scheme includes the precinct in an attempt to ensure appropriate land use control and the feasible management and future development of the urban area. ▪ Further liaison and co-operation is required between the private property owners and the Moqhaka Municipality to ensure effective management of the areas.
Engineering Services: ▪ The area is completely serviced by means of electricity and water networks. ▪ Sewer is treated by means of sewerage tank for regular removal by the township developer. ▪ The management and the provision of bulk and infrastructure services in Renovaal are administrated by the township developer. ▪ The Municipality, at present, does not render engineering services in Renovaal. **Land Fill Site:** ▪ D: Licensing and proper management of the landfill site at Renovaal, in close proximity of the Renoster River, must be addressed as a matter of urgency.	

CURRENT SPATIAL FRAMEWORK	FUTURE DEVELOPMENT FRAMEWORK
Road Network: ▪ **A1:** Renovaal is less accessible through a secondary gravel provincial road, Road S641. ▪ The road links onto the Viljoenskroon/ Potchefstroom Road (R501), from where a secondary provincial gravel road (S641), provides access to the substantially isolated precinct.	

Vaal Reefs

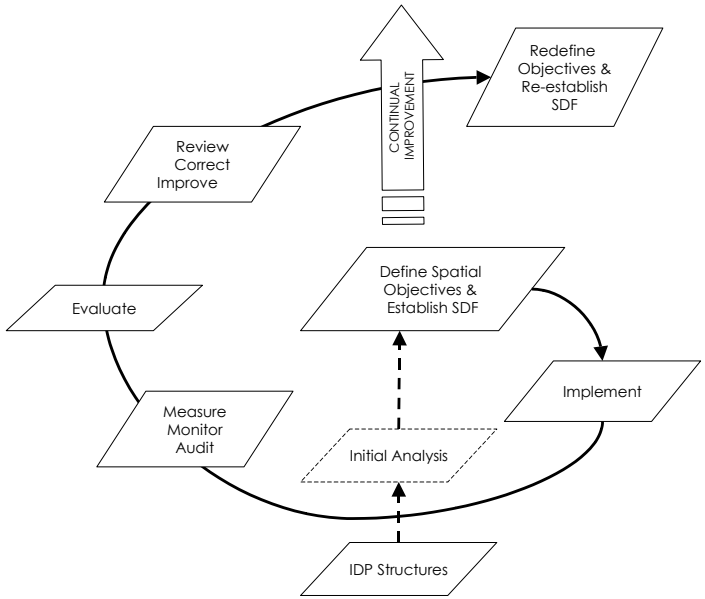
CURRENT SPATIAL FRAMEWORK	FUTURE DEVELOPMENT FRAMEWORK
Gold is actively mined by *AngloGold Ashanti* at the Vaal Reefs. Three shafts are currently being mined and the mining operations are considered, by the company, as a long-term enterprise. The shafts are known as (see Figure 8B): - Great Noligwa Mine - Kopanang Mine - Moab Khotsong Mine Existing mining activities are undertaken on a vast area, comprising of 5 489 ha of which approximately 2 600 ha are, at present vacant. Three mines are operational and the mining terrains include plants, storage, residences, dumps, workshops and the like.	▪ Gold will be mined for the long-term at Vaal Reefs - land use control in these areas is imposed in terms of Land Use Scheme under the zoning "Mine and Mining Activities".[38] ▪ Future development of vacant land for residential purposes is, however, not envisaged by the concerned mining company. ▪ Current informal settlements at the mining terrains need to be promptly addressed and resolved with the mining company to prevent the disorderly settlement.

[38] The zoning "Mine and Mining Activities" permits the following uses: agricultural purposes, extractive industry, industry, mine and mining activities, motor workshop, residential building, scrap yard, service industry (all the mentioned uses, only in conjunction with mining activities).

CURRENT SPATIAL FRAMEWORK	FUTURE DEVELOPMENT FRAMEWORK
Hostel complexes were developed at Great Noligwa and Kopanang mines and comprises an approximate 3 000 hostel units with an estimated population of 9 000 residents. An informal settlement, comprising an estimated 180 temporary structures, subsequently developed adjacent the Vaal Reefs hostels with an approximate 720 residents.	
Engineering Services: ▪ The area is completely serviced by means of electricity, sewer and water networks. ▪ The management and the provision of bulk and infrastructure services in Vaal Reefs are administrated by *AngloGold Ashanti*. **Road Network:** ▪ The three shafts of the *AngloGold Ashanti* mining activities at the Vaal Reefs are linked with the R30 via the Stokkiesdraai Road; the R30 link via the R76 with Viljoenskroon, being the primary link road between Orkney and Viljoenskroon. ▪ The areas are, however, well and directly linked with Orkney, just opposite the Vaal River, through two tar roads and bridges crossing the river, affirming its more direct association with Orkney and the North West Province.	

FRAMEWORK FOR IMPLEMENTATION, MONITORING AND EVALUATION .11

The aims, objectives and guidelines set in the SDF must be achieved to ensure that development and land use management are adequately addressed. The achievement of the aims, objectives and implementation of guidelines will be achieved more satisfactorily through a process of continual improvement of the SDF. Continual improvement is achieved through a process of reviewing, amending, monitoring and evaluation. The following framework attempts to provide guidelines to the Municipality to ensure that a process of continual improvement is persistently followed.



Implementation

The SDF is a guideline document that demonstrates compliance of the IDP with spatial principles and strategies and serves as a basis for spatial co-ordination of activities and for land use management decisions. The overarching purpose of the SDF could be summarised as follows:

- Providing general direction to guide decision-making and action over a multi-year period aiming at the creation of integrated and habitable cities, towns and residential areas,
- Creating a strategic framework for the formulation of an appropriate land-use management system, thereby:
  - informing the decisions of development tribunals, housing departments and relevant development committees; and
  - creating a framework of investment confidence that facilitates both public and private sector investment.

The SDF is a statutory sector plan of the IDP and therefore needs to be specific in instances; especially to enforce or to prevent certain types of land use. This, however, does not imply that it has to be prescriptive with regard to the way each and every land parcel in the municipal area. The implementation of projects or any suggested land use changes should thus be viewed against the general principles and the detail proposals of the SDF. Where a change in circumstances, new event or specific developments results in conflict with the SDF the Council may consider to:

- Amend the SDF - The term **"amendment"** refers to a physical change to the SDF as a result of the review process, or in response to proposals by the MEC. Amendment may also be necessitated to enhance development or in view of changed circumstances. Amendment is endeavoured where a quick response is required and is attempted through the regulations provided therefor.[39]
- Review the SDF as part of the IDP Review process - In this context, **"review"** means a process whereby the SDF is assessed/evaluated in terms of the Municipality's performance as well as changed circumstances. Review is endeavoured annually and a quick response is not necessarily required.

Amendment and Review

The decision of whether to amend the SDF, only during the annual review or immediately in response to an event or new information, may depend on the nature of the event or information. An immediate amendment may be relevant if new information or an envisaged event/development:

- has a substantial impact on the nature or understanding or priority issues in the Municipality, that may require adjustments to strategies, projects, programmes,
- presents new opportunities with an immediate effect requiring a quick response from the Municipality, or allowing the Municipality to speed up implementation.

The Local Government: Municipal Planning and Performance Management Regulations outlines actions regarding the prescribed process to amend the IDP (or, in this instance the SDF being a Sector Plan of the IDP):

- Only a member or committee of a Municipal council may introduce a proposal for amending the Municipality's Integrated Development Plan in the Council.
- A reason for amending the IDP must accompany the proposal to amend the IDP, and the proposal must also be aligned with the district's IDP framework.
- The amendment is adopted via a decision taken by the Council.
- Reasonable notice must be given to the members of the council, and the amendment must also be published for public comments for at least 21 days.
- The District Municipality must consult the Local Municipalities in the area and take their comments into account.

[39] Section 3 of the Local Government: Municipal Planning and Performance Management Regulations, 2001, as published in GN R796 in GG 22605 of 24 August 2001

- The Local Municipality must consult the District Municipality in its area and take its comments into account.

Where a quick response is not required and the new event or new information could be incorporated in the annual review process, the SDF will be reviewed with the normal and annual revision process of the IDP. The SDF has to be reviewed annually in order to:

- Ensure its relevance as the Municipality's guideline for land use management and development.
- Inform other components of the Municipal business process.
- Inform the cyclical provincial government of long-term development intentions of the area.
- Reflect on the impact of successes as well as corrective measures to address problems.
- Accommodate changes in internal and external circumstances that may impact on the SDF.

Monitoring and Evaluation

The system for monitoring the SDF with the specific intention of evaluating the delivery is to ensure that the aims and objectives of the SDF are achieved and that the Municipality could make relevant adjustments to its SDF. Monitoring and evaluation are also used as 2 separate but interrelated concepts.

- **Monitoring**

Collecting relevant information: The gathering of information used to track the progress of delivery against the identified aims and objectives and also development guidelines as identified in the SDF. Monitoring in the context of SDF refers to the gathering of data and the subsequent organizing of data into sets of information about certain actions / events / situations throughout the year. Three main bodies of information are important as input into the review process:

- **Implementation management information,** mainly refers to information that measures progress with the implementation of the SDF through a series of indicators such as completion timeframes, use of resources, implementation of development guidelines etc.
- **Information about the achievement of aims and objectives and implementation of guidelines in the SDF** will have to be measured over time. This is done in terms of the indicators that have been set, to determine whether the outcomes strived for have been achieved.
- **New information** may be generated from internal or external sources and reflects changes to the internal or external context of the Municipal area that impacts on the appropriateness of the SDF. It could include information such as (information needs monitoring and recording throughout the year for consideration in the review process):

- baseline data on demographics,
- new policy and legislation,
- budget information from other spheres of government as well as municipal budget review processes,
- more or improved in-depth information about the existing situation and priority issues, information about new developments and trends,
- changes in the existing situation due to unexpected events such as natural disasters,
- new investment opportunities,
- the input from stakeholder organizations and constituencies.

- **Evaluation**

Analysing and interpretation of relevant information: Analysing and evaluating the meaning of the information and applying the understanding to improve delivery and its impact on the community. The information gathered through the process of monitoring described above is assessed to understand its relevance and implications to the SDF. The relevant information is analysed for its relevance to achieving the ideal urban form as prepossessed in the SDF. The following activity sheet is proposed as a framework for monitoring and evaluation of the SDF implementation:

Responsibility	Roles	Evaluation & Outputs
▪ The Municipal Manager ▪ IDP Manager ▪ Relevant Officials ▪ SDF Specialists	▪ The organising of data and collation of information is the responsibility of the Municipal Manager / IDP Manager who has to put in place and co-ordinate a process or system for this purpose, and designate roles to appropriate persons. ▪ The Municipal Manager / IDP Manager should prepare an initial summary of the relevant information for consideration within the IDP Steering Committee.	▪ Key information about changes in circumstances and new information compiled into a single body of information, related to the SDF. ▪ Incorporate all other relevant baseline and other information that became available during the course of implementation of the SDF.
▪ IDP Steering Committee ▪ SDF Steering Committee	The SDF Steering Committee, should package the relevant information in terms of: ▪ difficulties in implementation to enable decisions about the improvement of processes.	All new information/ major unexpected events have to be evaluated in terms of their relevance, to serve as an input into the SDF review process. It also has to be evaluated to determine what its impact would be on the SDF.

Responsibility	Roles	Evaluation & Outputs
▪ SDF Specialists	▪ information about new legislation and trends that have to be related to the SDF. ▪ continued relevance and appropriateness of the current aims objectives and guidelines of the SDF.	Refine and filter the information (discard irrelevant information) by: ▪ organising the information and ensuring that information addresses various components of the SDF (if not, information should be discarded). ▪ linking the information gathered to the relevant aspect of the SDF (no link, discard information).
▪ IDP Representative Forum ▪ SDF Specialists	It should be determined whether the new information and or unexpected events should be considered when reviewing the SDF, and what are its likely impact on the SDF. Some of the information/assumptions that the SDF was initially based on may have to be challenged. The forum should: ▪ comment and debate the relevant information and consider its impact on the SDF, ▪ further assess the implications / impact of the information on the SDF, ▪ document and agree on the necessary amendments and refinements to the SDF, ▪ give feedback to the IDP Steering Committee to ensure incorporation of amendments and refinements to the SDF.	The SDF document has to be amended to reflect the implications of changing circumstances and new information. A systematic process has to be followed whereby the relevant components of the SDF are amended to reflect the input gained from the previous activities. The outputs should imply: ▪ updating of the description of the existing situation and priority issues, ▪ refine and amend aims, objectives and guidelines where appropriate, ▪ identify more complicated and systemic blockages in implementation that may occur and define action-based solutions.
Council	Once the SDF has been reviewed, the revised document has to be adopted by the Municipality.	Once the draft revised SDF has been prepared: ▪ opportunity has to be provided for comment from the public and national / provincial departments.

Responsibility	Roles	Evaluation & Outputs
		▪ a district level workshop is held to achieve horizontal and vertical alignment between the District and bordering Local Municipalities. ▪ comments are incorporated / attended to. ▪ revised SDF is submitted to the Municipal Council and adopted by the Council.

Conclusion

Monitoring and evaluating the SDF, is a tool to assist the Municipality in assessing its progress with implementation of the SDF. It is to verify whether the spatial vision and development objectives are attained and, where required, to make adjustments and revisions to the SDF and implementation thereof to ensure improvement of its delivery.

Summary of Planning Policies - Spatial Related Drivers and Objectives: Annexure 2

NDP: Summary of Spatial Related Drivers and Objectives

NDP Drivers[40]	Objectives	Nr.
Driver 1 Diversify and expand agricultural development and food security	▪ Protection of rural livelihoods	1.
	▪ Expansion of commercial agriculture	2.
	▪ Conservation and restoration of protected areas	3.
Driver 4 Capitalise on transport and distribution opportunities	▪ Upgrading the Durban Gauteng freight corridor	4.
Driver 8 Expand and maintain basic and road infrastructure	▪ Access to clean, potable water	5.
	▪ Access to electricity grid	6.
	▪ Enough water for agriculture and industry	7.
	▪ Renewable energy (20 000 MW)	8.
Driver 9 Facilitate sustainable human settlement	▪ Spatial planning system	9.
	▪ Upgrade all informal settlements	10.
	▪ Improve balance between location of jobs and people	11.
	▪ Development of spatial compacts	12.
	▪ More jobs in or close to dense, urban township	13.
	▪ Support rural and urban livelihoods	14.
	▪ Greater spatial mix	15.
	▪ Densification of cities	16.
	▪ Resource allocation	17.
	▪ Better located housing and settlements	18.
	▪ Public transport	19.
Driver 12 Integrate environmental limitations and change into growth and development planning	▪ Expansion of commercial agriculture	20.
	▪ Conservation and restoration of protected areas	21.

[40] Improvement of infrastructure is a cross cutting issue regarding all drivers

MTSF: Summary of Spatial Related Drivers and Objectives

MTSF Drivers	Objectives	Nr.
Driver 1 Diversify and expand agricultural development and food security	▪ Develop under-utilised land in communal areas and land reform projects	1.
	▪ Expand land under irrigation	2.
	▪ Acquire and allocate strategically located land	3.
	▪ Improve transport infrastructure and public transport in rural areas	4.
Driver 2 Minimise the impact of the declining mining sector and ensure that existing mining potential is harnessed	▪ Create new mining opportunities	5.
	▪ Re-use mining infrastructure	6.
	▪ Implement mine tourism initiatives	7.
	▪ Rehabilitation of mining areas	8.
Driver 4 Capitalise on transport and distribution opportunities	▪ Durban- Free State- Gauteng Logistics and Industrial Corridor	9.
	▪ Improve and preserve national, provincial and local road infrastructure	10.
	▪ Improve public transport	11.
Driver 8 Expand and maintain basic and road infrastructure	▪ Water-resources development, bulk water supply and wastewater management	12.
	▪ Commission at least 7000 MW of renewable energy by 2020	13.
Driver 9 Facilitate sustainable human settlement	▪ Fast track release of well-located land for housing and human settlements	14.
	▪ Access to basic infrastructure and services in new development	15.
	▪ Address infrastructure and basic services backlog	16.
	▪ Promote integration and densification	17.
	▪ Human settlement development	18.
	▪ Nodes and linkages to be developed in historically black townships	19.
Driver 13 Mainstream rural development into growth and development planning	▪ Land reform	20.
	▪ Acquire and allocate strategically located land	21.
	▪ Improve transport infrastructure and public transport in rural areas	22.
	▪ Provide access to piped water in rural areas	23.
	▪ Provide access to sanitation services in rural areas	24.
	▪ Provide access to energy in rural areas	25.

PSDF: Summary of Spatial Related Directives and Objectives

PSDF Directives	Objectives	Nr.
C1 Land Use Planning	▪ Implementation of SPCs	1.
	▪ Future spatial patterns	2.
	▪ Cross boundary issues	3.
C4 The Natural Environment	▪ Identification of core conservation area	4.
	▪ Creation of appropriate Buffer Areas	5.
	▪ Creation of continuous network of natural resources	6.
C5 Agricultural areas	▪ Develop the Free State agricultural sector	7.
	▪ Protect high potential agricultural land	8.
C6 Urban Areas	▪ Sustainable settlements	9.
	▪ Prohibit further outward expansion	10.
	▪ Spatially integrate	11.
	▪ Develop walking and cycling routes	12.
	▪ Densify urban settlements	13.
	▪ Restructure road networks	14.
	▪ Identification of towns that qualify for projects	15.
C7 Industrial Areas	▪ Establish industrial areas and infrastructure	16.
	▪ Planning, design and construction comply with the principles of sustainability	17.
C8 Surface Infrastructure	▪ Provide and maintain an adequate road and railway transport system	18.
	▪ Provide water resources infrastructure	19.
	▪ Reliable supply of water from bulk water resources infrastructure	20.
	▪ Provision of communities access to water infrastructure	21.
	▪ Promote the development of renewable energy supply schemes	22.
	▪ Development op bulk services	23.
	▪ Provide household services	24.
C9 Tourism	▪ Develop the Free State as a tourist destination	25.
C10 Efficient Governance	▪ Land-use management	26.
	▪ Safeguard the environment	27.
	▪ Indicate current or potential future problems that need to be addressed	28.
	▪ Rectify deficiencies	29.

FSGDS: Summary of Spatial Related Drivers and Objectives

FSGDS Drivers	Objectives	Nr.
Driver 1 Diversify and expand agricultural development and food security	▪ Sustainable agriculture	1.
	▪ Protect agricultural land guilty	2.
	▪ Land restitution	3.
	▪ Upgrading and maintenance of road and rail infrastructure	4.
	▪ Identify growth points	5.
Driver 2 Minimise the impact of the declining mining sector and ensure that existing mining potential is harnessed	▪ Re-use mining infrastructure	6.
	▪ Implement mine tourism initiatives	7.
	▪ Rehabilitation of mining areas	8.
Driver 4 Capitalise on transport and distribution opportunities	▪ Develop the Harrismith logistics hub and the N8 corridor	9.
	▪ Optimise the potential of existing regional airfields	10.
	▪ Develop and maintain an efficient road, rail and public transport network	11.
	▪ Improve road infrastructure	12.
	▪ Improve public transport facilities	13.
	▪ Improve rural public transport	14.
Driver 5 Harness and increase tourism potential opportunities	▪ Tourism development and growth	15.
	▪ Develop tourism routes	16.
Driver 8 Expand and maintain basic and road infrastructure	▪ Maintain and upgrade basic infrastructure	17.
	▪ Provide new basic infrastructure	18.
	▪ Identify and facilitate the implementation of infrastructure	19.
	▪ Provide and upgrade bulk services	20.
	▪ Implement alternative sanitation, water and electricity infrastructure	21.
Driver 9 Facilitate Sustainable Human Settlement	▪ Accelerate township establishment	22.
	▪ Identify and acquire land parcels for integrated human settlement	23.
	▪ Socially integrated human settlements	24.
	▪ Densification	25.
	▪ Intensify informal settlements upgrading	26.
Driver 12	▪ Conserve and consolidate functional natural areas	27.

FSGDS Drivers	Objectives	Nr.
Integrate environmental limitations and change into growth and development planning	▪ Improve protection to riparian zones of the Free State rivers	28.
	▪ Improve protection status afforded to wetlands and grasslands	29.
	▪ Expand responsible extensive wildlife ranching	30.
Driver 13 Mainstream rural development into growth and development planning	▪ Facilitate land reform	31.
	▪ Improve rural development	32.
	▪ Establish agri-villages in selected areas	33.

IDP: Spatial Objectives

Area	IDP Objectives (2014)	Nr.
Water	▪ Improve access to basic services	1.
	▪ Improve water quality	2.
	▪ Improvement of water conservation and water demand management	3.
Sanitation	▪ Improve access to basic services	4.
	▪ Eradicate all the buckets in formal and informal settlements by 2014	5.
Electricity	▪ Improve access to basic services	6.
	▪ Increase capacity for electrical bulk supply	7.
Waste Management	▪ Registering of landfill sites and improving infrastructure	8.
Housing	▪ Acceptable safe and quality housing	9.
	▪ Replace informal structures and eradicate the current backlog	10.
	▪ Ensure the accessibility of land for future residential development and to facilitate land redistribution	11.
Roads & Transport	▪ Continuous maintenance and upgrading of all tar, gravel and unsurfaced roads and storm water networks	12.
Agriculture	▪ To diversify the agricultural sector	13.