DRAFT October 2019

Two Rivers (LSDF)
Local Spatial Development Framework
(Draft October 2019)

List of Figures

List of Tables

Acknowledgements

Two River LSDF : Draft 4: October 2019

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We acknowledge the traditional custodians of this land and pay respect to their leaders, past and present.

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Opening Statement

CHANGES TO THE PLANNING OBJECTIVES OF TWO RIVERS LSDF

2003

The Two Rivers Urban Park (TRUP) Contextual Framework, 2003 (the 2003 TRUP CF) provided a framework for the environmental management of the area at the confluence of the Black – and - Liesbeek Rivers. It earmarked three precincts for development and concluded that significant investment in utility and road transport infrastructure would be required for further urban development to occur within the TRUP site boundaries; particularly with a focus towards increasing the capacity of the surrounding road, sewerage and water supply networks. It was formulated in terms of the old Land Use Planning Ordinance (No. 15 of 1985) as part of a package of plans approach to developing the site.

2015

A team of consultants under Nisa Mammon & Associates Consultants was appointed in 2015 to update the previous work done to align with the new City of Cape Town Planning Bylaw, 2015. They were also tasked with developing the plan from a Contextual Framework to a Development Framework (DF) in terms of the package of plans approach. A DF identifies overall policy, broad goals, and principles for development within a particular development area. **The objectives were** *inter alia* **to develop in a manner whereby additional infrastructure was not required.** A number of baseline studies were completed, However, the plan was incomplete and was not advertised for public comment. The engagement process did not sufficiently incorporate, acknowledge and integrate the cultural heritage layer of the First Nations.

2018- 2019

The Executive Mayor of the City of Cape Town resolved that a process of Compilation of a Local Spatial Development Framework as prescribed within **Sections 12 to 14, read with Section 11 of Part 3 of the City of Cape Town Municipal Planning Bylaw, 2015** be initiated to align proposals for the Study Area with the new **MSDF, 2018** for the City of Cape Town and the principles outlined in the **Spatial Planning and Land Use Management Act, 2013** which inter alia address spatial justice spatial restructuring and spatial equity; as well as the TOD Strategy and IPTN. A new consultant team under ARG Design were then appointed to finalise this work. **The emphasis now shifted to addressing rapid urbanisation providing housing and employment opportunities that would unlock the development of the site, while enhancing and protecting the river corridors and acknowledging a variety of open space needs. The plan would need to acknowledge and integrate the First Nations narrative as one of the layers to be institutionalised into the planning process.**

CHANGE IN THE VISION: CATALYTIC ROLE OF THE SITE.

The previous vision of the study area promoted a New York style Urban Park , or "doughnut" with a green/park core and high rise buildings on the edges. This was to be supported by high tech green infrastructure, that made no impact on the grid. This somewhat "utopian vision" does not deal with the reality on the ground or with the current mandate and National imperatives in SPLUMA to create housing and jobs. Cape Town has a housing backlog of over 400,000 and growing unemployment, every opportunity has to be explored for positive development and redress of spatial and economic segregation

At the core of the study area on a hill are a number of large institutions with built heritage significance, which have long term plans to remain on the site. The opportunities for development on the site are severely curtailed in addition, by two large ecological corridors that are linear in form that cut through the study area and that need to be protected and enhanced. Their form in the landscape promotes a linear park. The site includes an industrial area, a small village, an institution for people with intellectual disabilities and a golf course. The river in the Black River inhibits public contact due to severe water pollution. A number of sensitive wetlands mitigate against open access. Therefore the vision of an open park resides solely with the golf course area. This area has limited ecological value except to provide faunal access across it. At the same time, the City of Cape Town published a series of policy guidelines including a new Municipal Spatial Development Framework(2018), Transit Oriented Development (TOD) strategy and Integrated Public Transport Network that promoted spatial integration and an emphasis on developing strategic state land within the Urban Inner Core(UIC). This golf course area can cater to some of the goals of employment creation , spatial integration and inclusionary housing.

The idea of a car free /off grid environment, although not contrary to the new vision, cannot be implemented in the short or long term due to the absolute crisis in the public transport sector. These are still part of the vision for the long term.

FLOODING ISSUES

The proposed development of the River Club has raised a number of issues that affect the likelihood of flooding in the immediate catchment. Three hydrological studies have been carried out for the study area.

The biggest concern identified had been an increased risk of flooding in the study area, which is upstream of Paarden Eiland. However, it was demonstrated that upstream flooding is caused by flow constrictions at the rail bridge that crosses the Salt River Canal, immediately upstream of the FW de Klerk Boulevard bridge. It was found that the proposed development of the River Club would have minimal impact on the extent or nature of the floodplain, provided that international Best Management Practices are implemented. Compared to the potential positive impacts as a result of the proposed development, the flooding impacts are considered minimal.

CULTURAL HERITAGE AND HERITAGE IMPACT ASSESSMENT PROCESS.

The LSDF and a Phase 1 Heritage Impact Assessment are being developed simultaneously to ensure consistency and to comprehensively address the cultural and built heritage of the area. The process of preparing the Phase 1 HIA has been lengthy and complex, in part as a result of the on-going requirements of HWC, and in part as a result of a number of simultaneous, related or overlapping, and iterative processes, which have resulting in a confusing professional, legislative and public consultation environment. These have been referred to in previous reports, and will not be elaborated upon further. However in-principle submissions to and discussions with HWC in respect of the heritage assessments for the land in question include, inter alia:

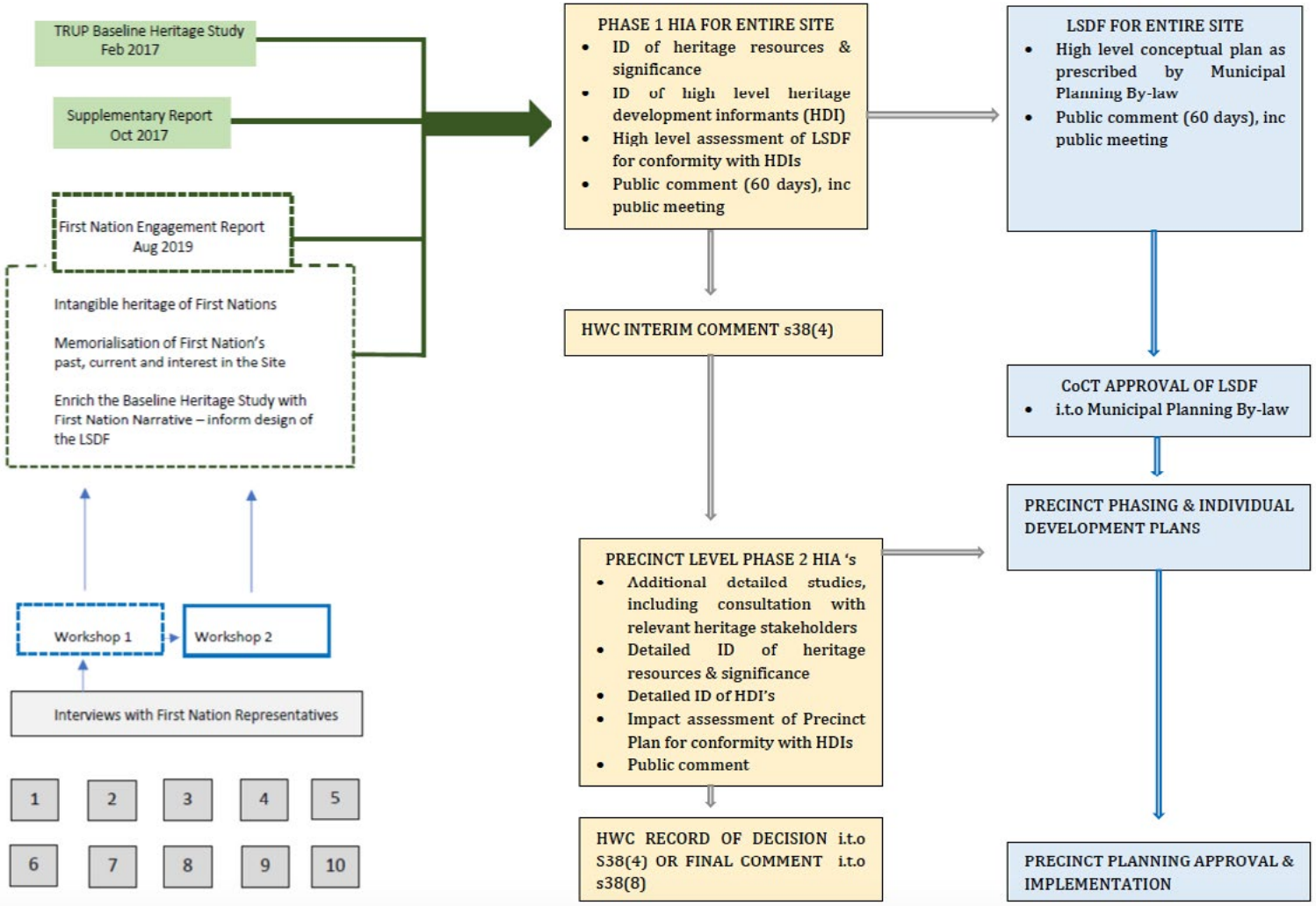
- Two Rivers Contextual Framework Review and Preliminary Heritage Study, Phase 1 Report first submitted to HWC November 2015, resubmitted May 2016;
- Notification of Intent to Develop (NID) submitted to HWC on 21 July 2016;
- Meeting with HWC held on 17 August 2016 during which it was agreed that a phased HIA process is the most appropriate to follow, to be prepared in

terms of Section 38(3) and 38(8);

- HWC correspondence dated 25 August 2016 in which it is confirmed that a phased HIA must be undertaken;
- Two Rivers Phase 1 Heritage Baseline Study submitted and presented to HWC Impact Assessment Committee (IACom) on 12 April 2017. An extensive process of consultation was established between 2015 and 2017 to engage the public in the TRUP planning process and associated baseline studies, including the Phase 1 Heritage Baseline Study (see Annexure B for details). This was facilitated by SUN (Sustainable Urban Neighbourhood Development). IACom request additional information;
- HWC Inventories, Grading and Interpretation Committee (IGIC) meeting of 31 May 2017 considers provisional protection of the site as a whole and concludes that the further work required by IACom should be completed before IGIC consider provisional protection.
- The Two Rivers Phase 1 Heritage Baseline Study Supplementary Report submitted October 2017 considered at IACom meeting of 8 November 2017. HWC require all supplementary information to be circulated for public comment.
- Advice in respect of process discussed at HWC's IACom 12 June 2019, confirmation that Western Cape Government Department of Transport and Public Works (DTPW) continue with public participation, include any comment or interaction and, if applicable, resultant development indicators in an updated baseline study. A further Report is intended to fulfil the requirements of a Phase 1 HIA for the site.

In May 2019, DTPW appointed AFMAS as a social facilitator with a specific brief to engage with First Nation representatives in respect of the heritage significance of the study area and their issues and concerns in this regard. The outcomes of this process are described in a Second Supplementary Report. The draft Phase 1 HIA incorporates the outcomes of the AFMAS engagement and any other relevant updated information into a revised and re-stated high level statement of heritage resources, significance and heritage indicators. This has formed the basis for a high level heritage impact assessment of a revised Local Spatial Development Framework (LSDF) for the study area.

Note: "According to HWC, the Two Rivers-LSDF as a whole could be regarded as one of the single most historically significant sites in the Country."(Source: CoCT: ERM)



Outline of the joint Heritage/ Planning process

1. Executive Summary

The study area represents a significant area of underutilised, state owned and private land, strategically placed within the Urban Inner Core of the City. The proximity to Public Transport and the opportunities offered to promote integration require that state finances are utilised to unlock the development potential of the study area. At the same time, the ecological role of the river corridors, the importance as a regional amenity and the significance placed on the layers of cultural and built heritage must be enhanced. The site currently has a dual character where it has both potent negative and positive effects on the surrounding urban landscape. It is simultaneously an "urban green lung" but also "urban divider". The site is a strategic site in the City with the potential to create new jobs and housing opportunities, while simultaneously improving the natural environment and enhancing the diverse cultural and built heritage..

Vision

Actively intensify the residential, economic, recreational and institutional urban activities by developing limited vacant land and connecting the Mosaic of Precincts at the confluence of two rivers and two urban corridors to:

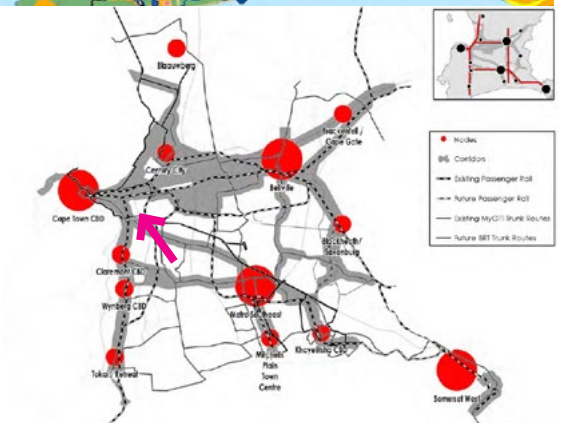
- Provide more residential units,
- Create more job opportunities,
- Celebrate complex layers of memory, cultural heritage, science and diversity,
- Enhance the structured and Open Space recreational and natural network
- Support healing and environmental resilience and
- Promote spatial integration & urban intensification

within an efficient mobility and infrastructure network"

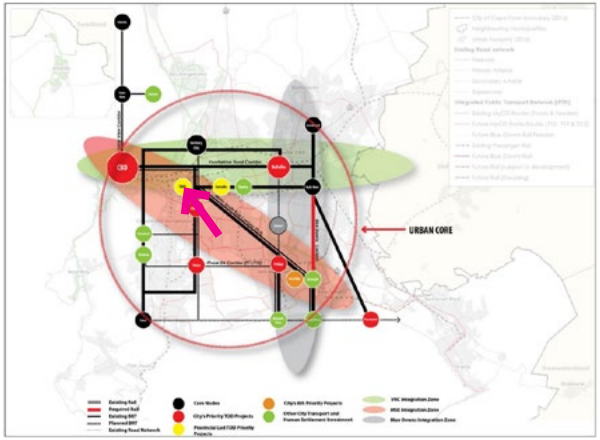
Policy alignment

MSDF: The MSDF, 2018 adapted the previous CTSDF and the BEPP spatial logic and in so doing established an Urban Inner Core.(UIC) **The Two Rivers local**

MSDF: Urban Inner Core in blue (priority urban investment)



Integrated Public Transport Network and nodes.(Priority transport corridors)



Integration zones and priority transit oriented development (TOD) catalytic projects.

area is located squarely within the UIC: The UIC represents the priority development and investment focus for the City at a metropolitan scale. Where infrastructure needs to be upgraded and prioritised to support intensification efforts in support of spatial transformation, budget will be prioritised here. Incentives and regulatory reform will be focused on the Urban Inner Core (UIC) together with co-operation and collaboration with other spheres of government and the private sector to direct the capital budget on time.

• **IPTN**: The City's view is that TOD is critical to the Integrated Transport Plan and development is promoted along selected transit corridors, where the combination of transport investment and development optimises the utilisation of transport Two Rivers is located within the land use intensification corridors premised around the IPTN;

Integration zones: Three Integration zones have been identified. Two Rivers is located at the confluence of two of the three Integration Zones (Voortrekker Road and Metro South-East);

•Two Rivers is one of the identified priority provincial TOD projects

• The Local area includes a portion of one of the city's industrial nodes (Ndabeni);

The implications for this area are therefore that development within the Two Rivers local area should be prioritised and that infrastructure upgrading should be pursued to facilitate development within this study area.

District Plan(2012) The open low-lying green riverine character of the site contributes to the intangible heritage experience. Part of coast to coast green-way.

Biophysical Theme

Areas of no hard development / infrastructure

No hard infrastructure should be developed in the following areas:

- Areas 'Protected in Perpetuity'
- Areas of high High Faunal Sensitivity or High Botanical Sensitivity, Critical Biodiversity Areas

Buffer zones: 35m should be maintained adjacent to the delineated edge of all aquatic features (rivers and wetlands)

Ecological corridors

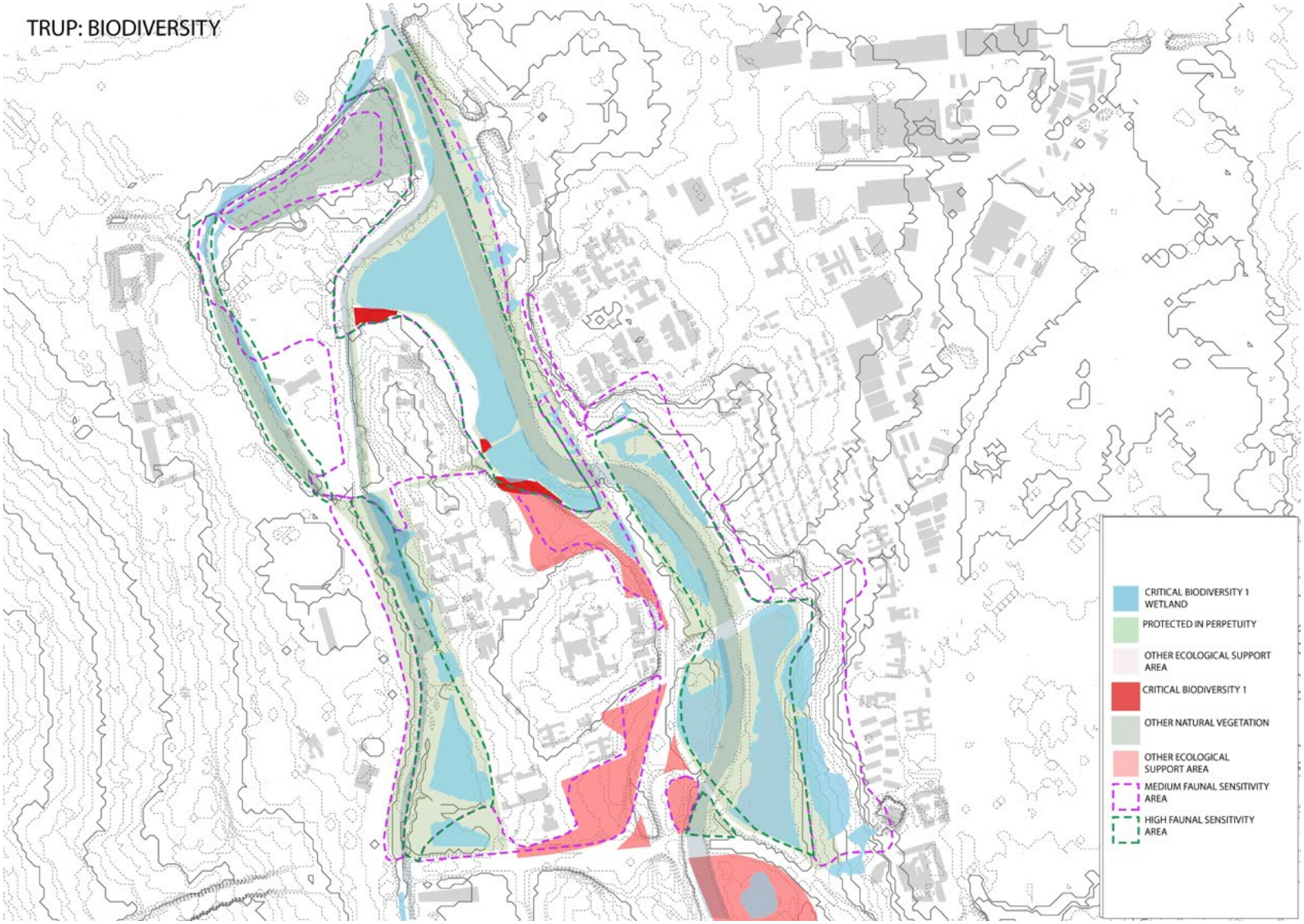
One broad (>70m) east-west belt must be maintained in the northern reaches of the River Club property, and an additional minor (>10m) east-west corridor must also be created along the northern and southern site boundaries.

East-west and north-south connectivity should not only be maintained, but improved across the site, if/where possible. With this in mind, the development of the study area should not compromise the ecological connectivity (terrestrial and aquatic) Connectivity within these corridors should be maintained or restored where possible. Observatory Road and the canalised section of the lower river have significantly impacted on the connectivity of Liesbeek River. Rehabilitation of the lower Liesbeek River should be undertaken according to an approved rehabilitation plan.

Development must not compromise ecological connectivity.

Socio- economic Theme

The Two rivers site is well located within a central part of the Cape Metro area and has the potential to be well serviced by road, rail and bus services if Berkley Road is extended. Due to the high demand for affordable housing in the area given its favourable location in terms of higher education institutions and commercial nodes, the site can meet the demand for housing if a variety of subsidised, affordable, student and market housing is provided. Furthermore, given the demand for commercial property



Areas of development and no development based on biophysical theme.

(office and industrial) in the surrounding areas, the site can take-up some of the demand, creating a live-work-play neighbourhood within central Cape Town. The development of residential, office and industrial space on the site will create the demand for some retail space in the area.

Built Environment and Infrastructure

The study area is characterised by strong north-south linkages and very **weak east-west linkages** as a result of the river corridors and limited vehicular and pedestrian crossings. The nature of the land uses (large, fenced - off institutions) have resulted in extensive, isolated patches that do not interact positively with neighbouring land uses/areas. These are inward looking land uses, creating a mosaic of land uses rather than one homogeneous suburb.

On average floor factor within the study area is 0.7. The vast majority of the study area is state owned land (78%) albeit that a large portion is the river corridors and the existing institutions. Although the site can contribute as a regional recreational facility and spatial integration site, **there are very few redevelopment opportunities due to environmental, heritage and other constraints. Therefore the sites that can be redeveloped should be maximised.**

The current transport network is **constrained** by the following factors, which have an impact on densities proposed for the site.

- There are no IRT Trunk Routes planned going through the local area, and the network plan as it is currently formulated does not include any long term routes in the vicinity of the site.
- Feeder routes can be provided to service the area, but there are currently limited east west road connections across the study area.
- There are no official minibus taxi routes on Liesbeek Parkway or Alexandra Road.
- While there are six rail stations around the site, only Pinelands, Observatory and Ndabeni Stations are within 500m walking distance from portions of the site closest to these stations, on the east side.
- In addition, the rail system is experiencing serious operational challenges.

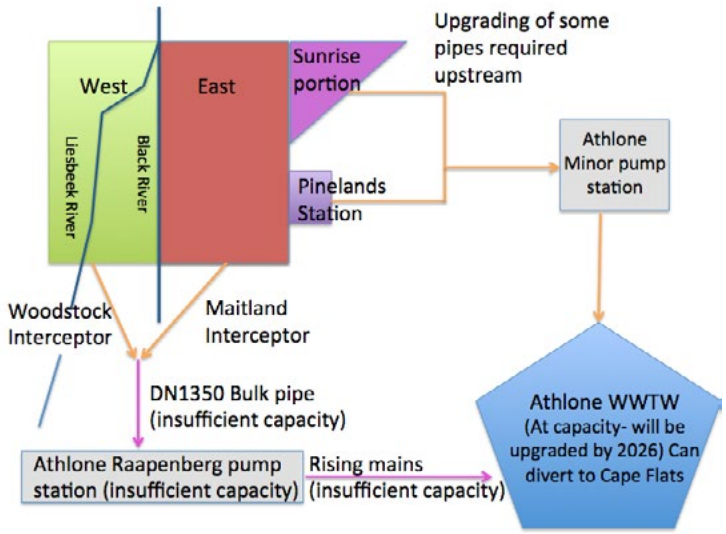
Based on the assumption that these challenges can be overcome, and new services introduced, some additional capacity can be established. The spare capacity to serve public transport demand towards the City in the mornings, is likely to remain limited.

- Access for NMT across the site (including the Black and Liesbeek Rivers and the M5), is currently not possible. A narrow single lane vehicular bridge serving Valkenberg Psychiatric Hospital does cross both the Black River and the M5, but is not currently open to the general public.
- No link through Valkenberg can be developed, so a NMT route only can be created around the outside edge of the estate
- The link proposed from the Valkenberg Estate across the Liesbeek River and Liesbeek parkway will provide an indirect east- west link. However there are a number of obstacles to the development of this link. Firstly it will need to cross a sensitive ecological area in the form of the Liesbeek River and floodplain, wetlands. Secondly,the expense will need to be justified, as this link will only serve the internal demand from Oude Molen, Valkenberg Estate and adjacent land uses.
- Should this link be implemented, the opportunity exists to extend this road westward across Liesbeek Parkway and into sports-fields,
- The extension of Station Road across Liesbeek Parkway into Observatory Road should be extended across the Black River and M5 to link with Alexandra Road. It is proposed that this link be used for public transport vehicles only
- The two new east-west linkages in the form of Berkley Road extension, Station Road/ Observatory Road extension, The NMT route outside of the Valkenberg Estate link with Liesbeek Parkway completes the grid pattern for the site which could help the formation of precincts on the site, and integrate the site with its surroundings

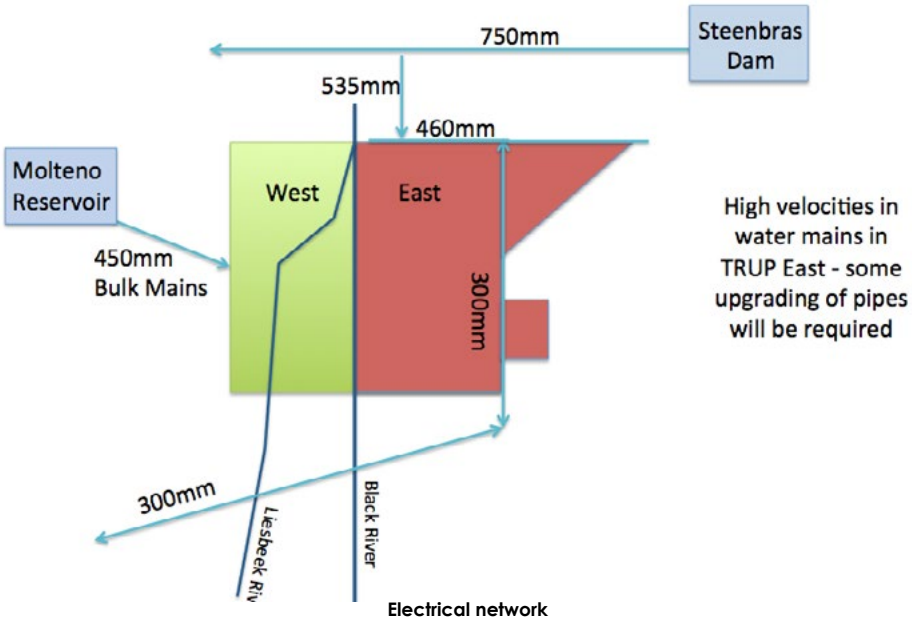
Foul Sewer: The Western side of the study area has some capacity, while the eastern side has less. A number of upgrades to the pump stations and Waste Water Treatment works are required to provide capacity (see foul sewer diagram).

Water Network: The western side of the study area has capacity for

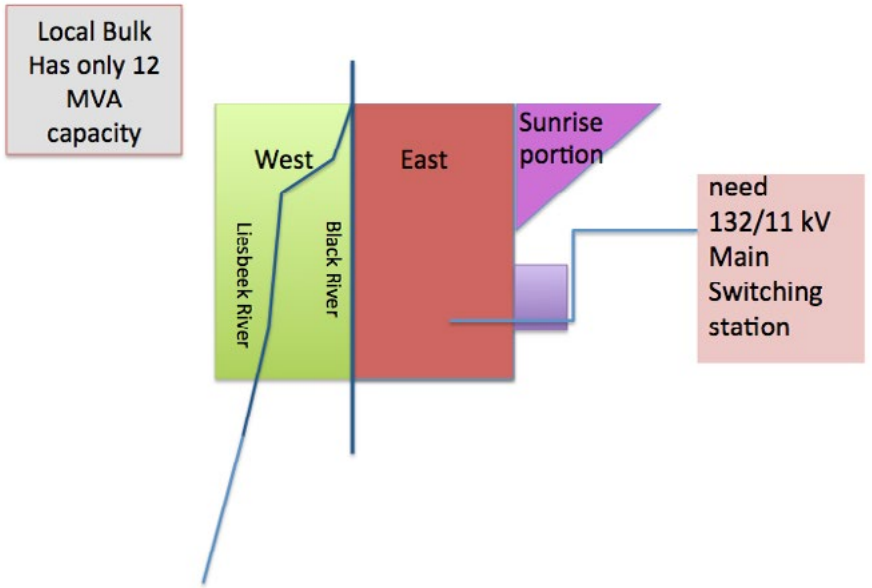
Foul sewer



Water Network



Electrical network



redevelopment . The Eastern side will require some minor upgrades to the water mains before development can be completed.

Electricity : There is some capacity on the western side of the study area and no current capacity on the eastern side, However , this can be remedied with the construction of a 132kv Main switching Station.

Heritage informants

These are extensively outlined in the Draft Phase 1 HIA (2019),some of the principle points relating to the site as a whole are briefly referred to here. The provision of a network of public spaces, landscapes and cultural spaces could most appropriately provide the opportunity to link the intangible and tangible heritage related to the site, and would be sufficiently open-ended to accommodate any future, more considered and consultative project input from any relevant parties.

Literature dealing with the complexity of tangible and intangible heritage frequently views cultural spaces (in its broadest sense) as the nexus where the tangible and intangible take meaningful form.

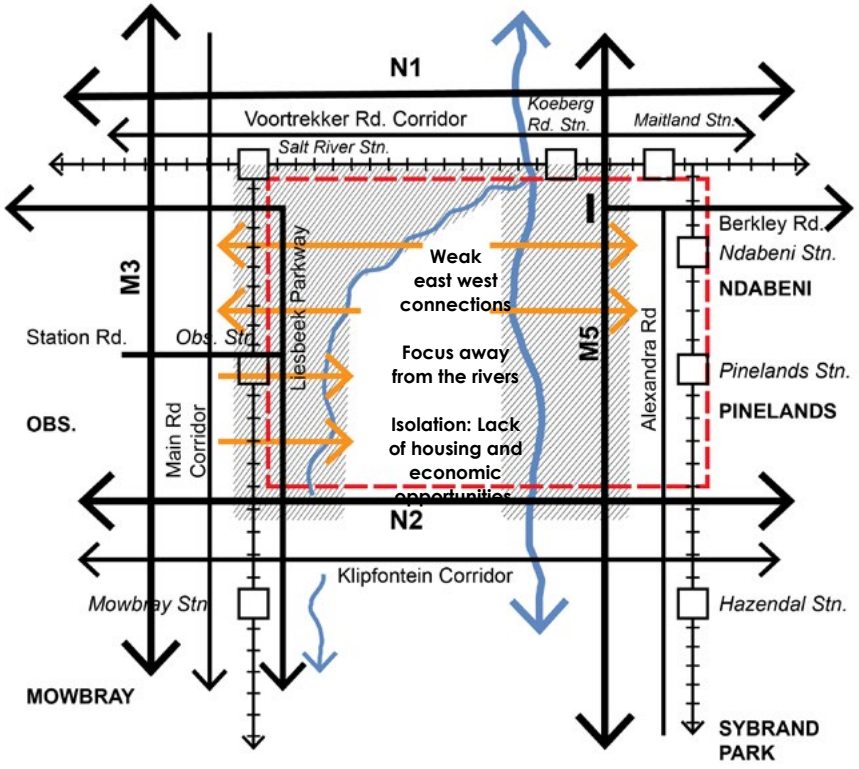
Biodiversity areas also represent a symbolic heritage resource where the concept of a pre-colonial pastoral landscape is made visible. Consequently, the presence of open wetland remnants may be considered a design informant as a symbolic representative of a time before the land was colonised.

Significant nodal points and precincts, associated landscape features, contexts, and responses to topography should be protected and enhanced. The sense of place arising from a unique historical character should be protected and enhanced as contributing to the landscape qualities of the area.

The strong linear nature of the River corridor system has resulted in the areas where crossings occur becoming gateways to the site. Because of the limited nature of such river "gateways", access to the site is currently low. It does however mean that the historic gateways increase in visual, symbolic and functional sensitivity. Gateways should be noted and responded to in a sensitive manner. Only Observatory Road currently fulfils this function and does so inadequately

Constraints diagram: The following diagram represents the constraints on the site , these are addressed in the spatial strategies in the next section.

Diagram indicating heritage constraints



Constraints diagram

Spatial Strategies

The spatial strategies adapted from the IDP and MSDF and responding to the constraints identified previously are:

• Spatial strategy 1: Build an inclusive, integrated, vibrant city(Connect/ integrate)

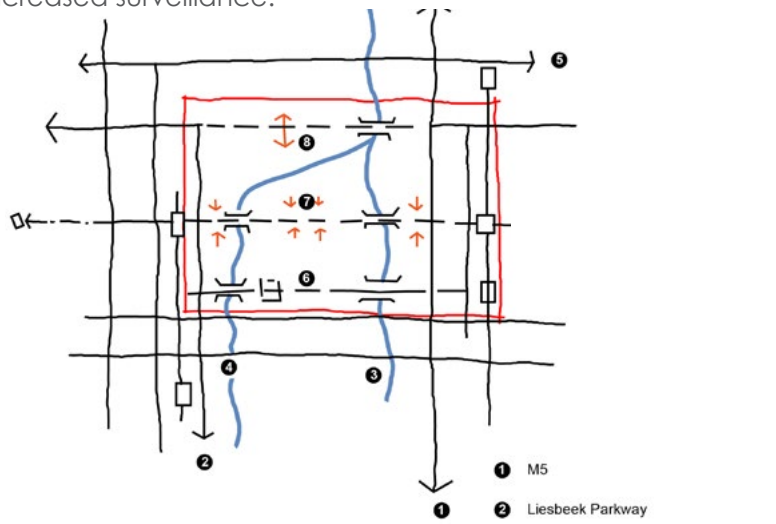
To connect the Precinct to the local area and in so doing facilitate integration of communities and enable local residents to access urban opportunity affordably.

Strategies to help achieve this objective include:

a) Enhancing the Vehicular, Public Transport and NMT routes around and where appropriate through the local area for efficiency.

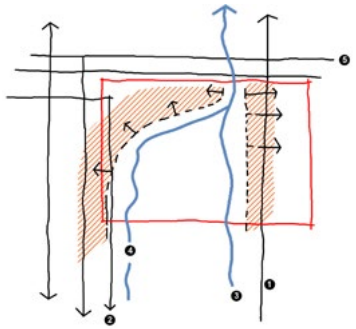
b) Promoting safety especially for pedestrians through activity along NMT routes and increased surveillance.

c) Spatial Justice through integration projects, mixed income housing and job opportunities.



Connect

• Spatial strategy 2: Manage urban growth, and create a balance between urban development and environmental protection.
(Enhance/Protect Biophysical/Heritage Resilience)



Existing Focus away creating a backyard river corridor area.

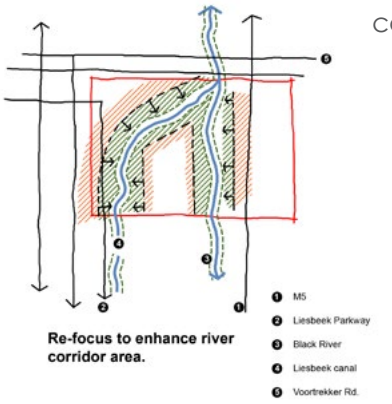
To enhance the sensitive ecosystems, river corridors and cultural landscape.

Strategies to help achieve this objective include:

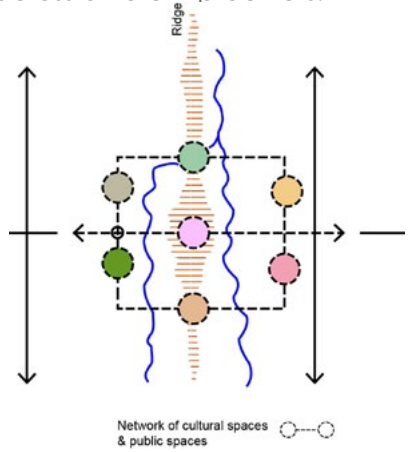
a) Structuring of the River Corridors into management zones that allow for collaboration and focused funding for rehabilitation and improved water quality;

b) Conservation of sensitive ecological areas through limited access while promoting access in less sensitive areas;

c) Acknowledgement and celebration of the cultural heritage and multiple layers of history including historic structures , historic landscapes and opportunities for gathering and ritual. Creating a network of cultural spaces and public places. Distributed spaces of engagement connecting across different precincts.



Re-focus to enhance river corridor area.



Network of cultural spaces & public spaces

• Spatial strategy 3: Plan for employment, and improve access to economic opportunities(Activate economic)

To create a vibrant, safe, efficient inner city environment.

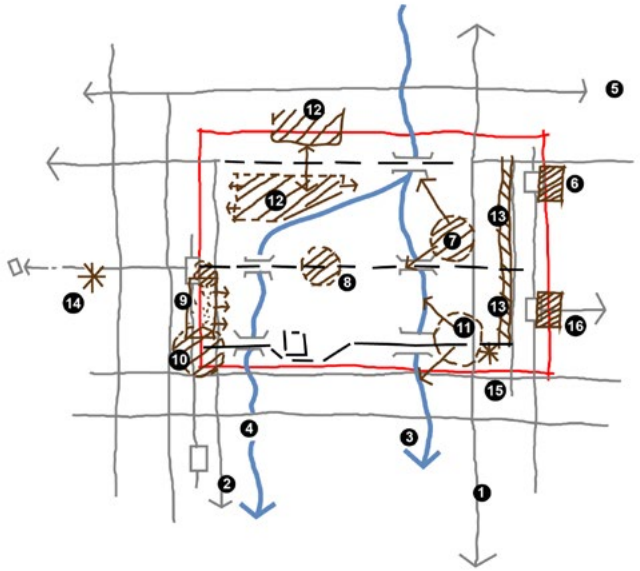
Strategies to help achieve this objective include:

a) Location of particular land uses, especially residential development, strategically to provide surveillance over key public spaces, day and night; and

b) Provision of social infrastructure and regional sports facilities to enhance current communities access to facilities.

c) Promotion of job creation opportunities in the industrial area focused on opportunities in the health and science industries.

Activate



1. M5
2. Liesbeek Parkway
3. Black River
4. Liesbeek canal
5. Voortrekker Rd.
6. Ndabeni Station related Social housing & forecourt space.
7. Public activity space lined with housing forming active edge to Alexandra Institute.
8. Public activity space lined with active edges and institutions
9. Regional sports facilities, orientated to help activate river edge.
10. Educational facility
11. Oude Molen Mixed-use
12. Mixed-use Berkley Road and river frontage
13. Alexandra Rd. developed as local activity route. Active commercial edge to street. 'High street' type shopping precinct.
14. Groote Schuur hospital. Major regional facility as anchor to west side of extended Station Rd. E / W connection.
15. Vincent Pallotti hospital. Major regional facility as anchor to east side of south E / W connection and south end of Alexandra Rd. activity route.
16. Pinelands Station related Social housing & forecourt space.

Urban Structuring Informants

The following structuring informants are relevant to the study area, supporting of the LSDF :

- Nodes
- Corridors
- Infill and Densification
- Containment and Protection (Including environment and heritage)
- Strategic Land Urban restructuring and upgrading - Precinct proposals and land use guidelines.
- Movement

The urban structuring informants are illustrated in this series of diagrams indicating the focus for future development of the study area.

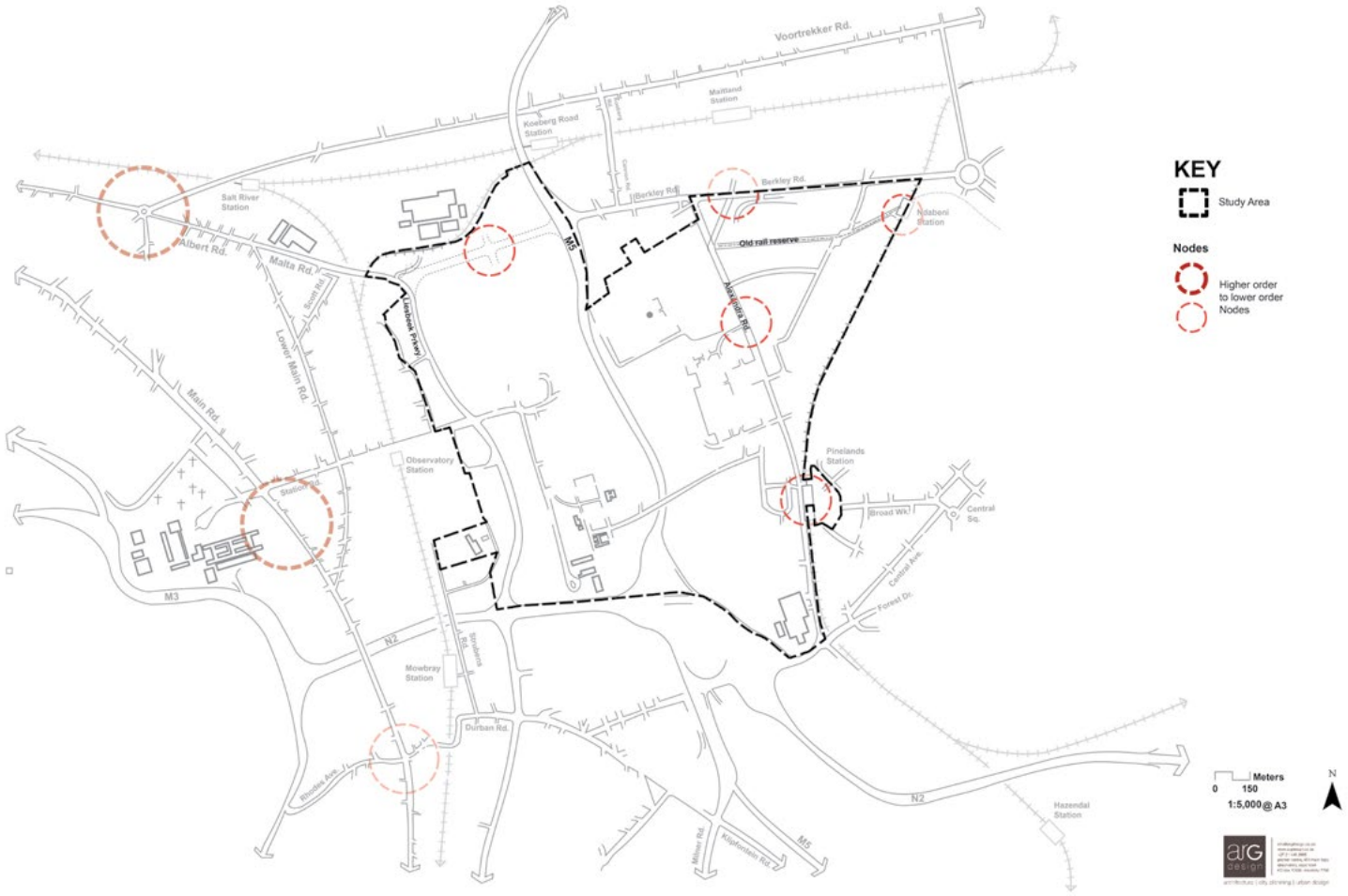
Nodes

Structuring Informant : Local Nodes

A node is an intersection or junction point where activity occurs.

Spatial Strategy

- The following local nodes should be prioritised for mixed use intensification based on their high level of accessibility supported by public transportation. :
- Intersection of Alexandra Road & Station Road
- These areas will require rezoning to mixed use.
- Berkley Road Extension between M5 and Liesbeek Parkway
- Smaller, mixed-use residential at Pinelands Station / Oude Molen and Ndabeni Station.
- Intersection of Alexandra and Berkley Road.



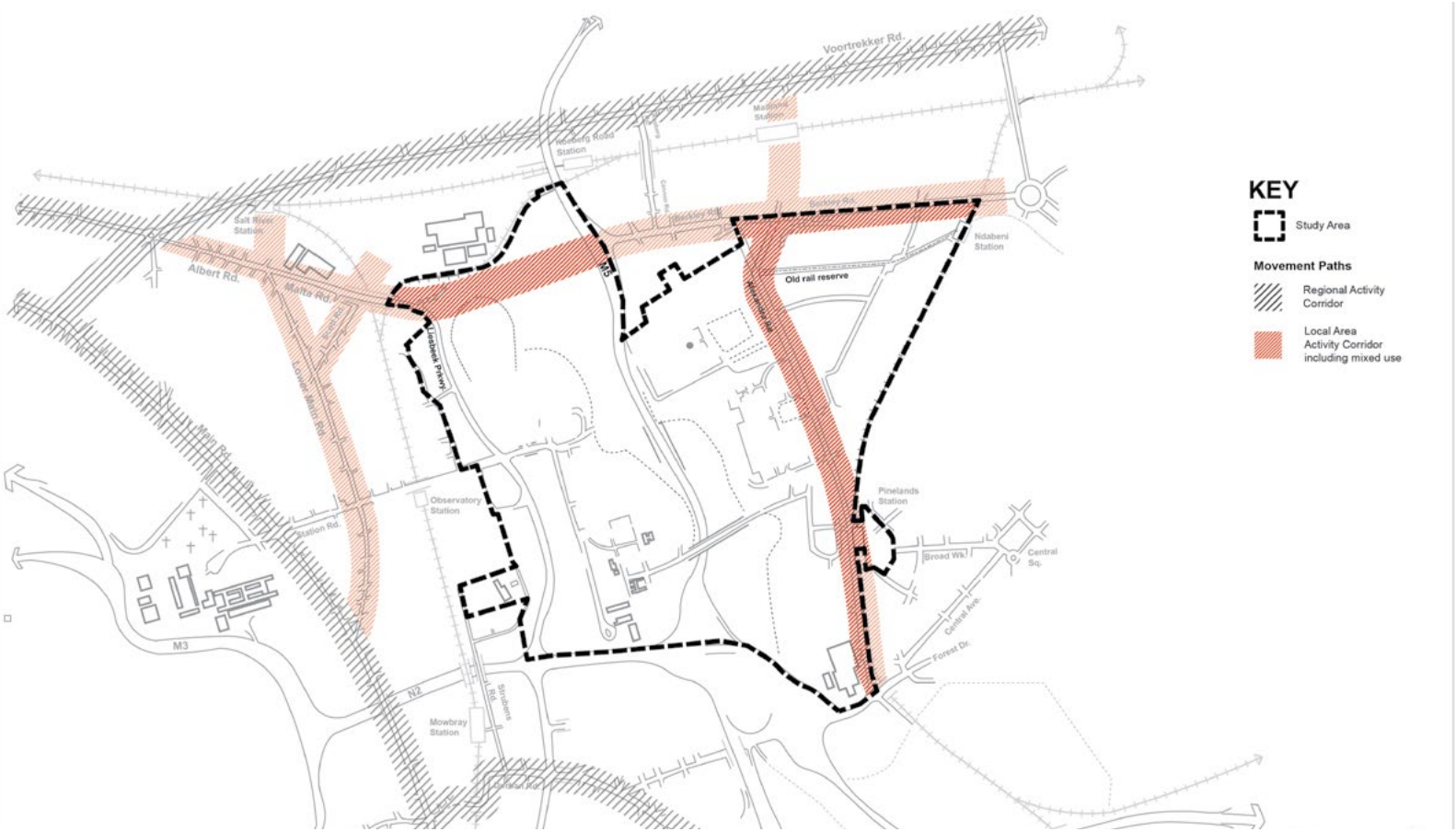
Nodes located along activity streets and in response to TOD opportunities.

Activity Streets

Local routes characterised by continuous development, including centres or nodes, mixed land use, linear commercial and business developments, light industry, institutions and social facilities.

Activity streets are characterised by direct access and interrupted movement flows, especially at bus and taxi stops and traffic lights. These streets represent linkages between nodes and activity areas based on mobility advantages.

An increased intensity of development will naturally be attracted and should be encouraged along these streets, improving access to opportunities and public transport systems.



Activity corridors to reinforced through mixed use development and to link nodes.

Spatial Strategy

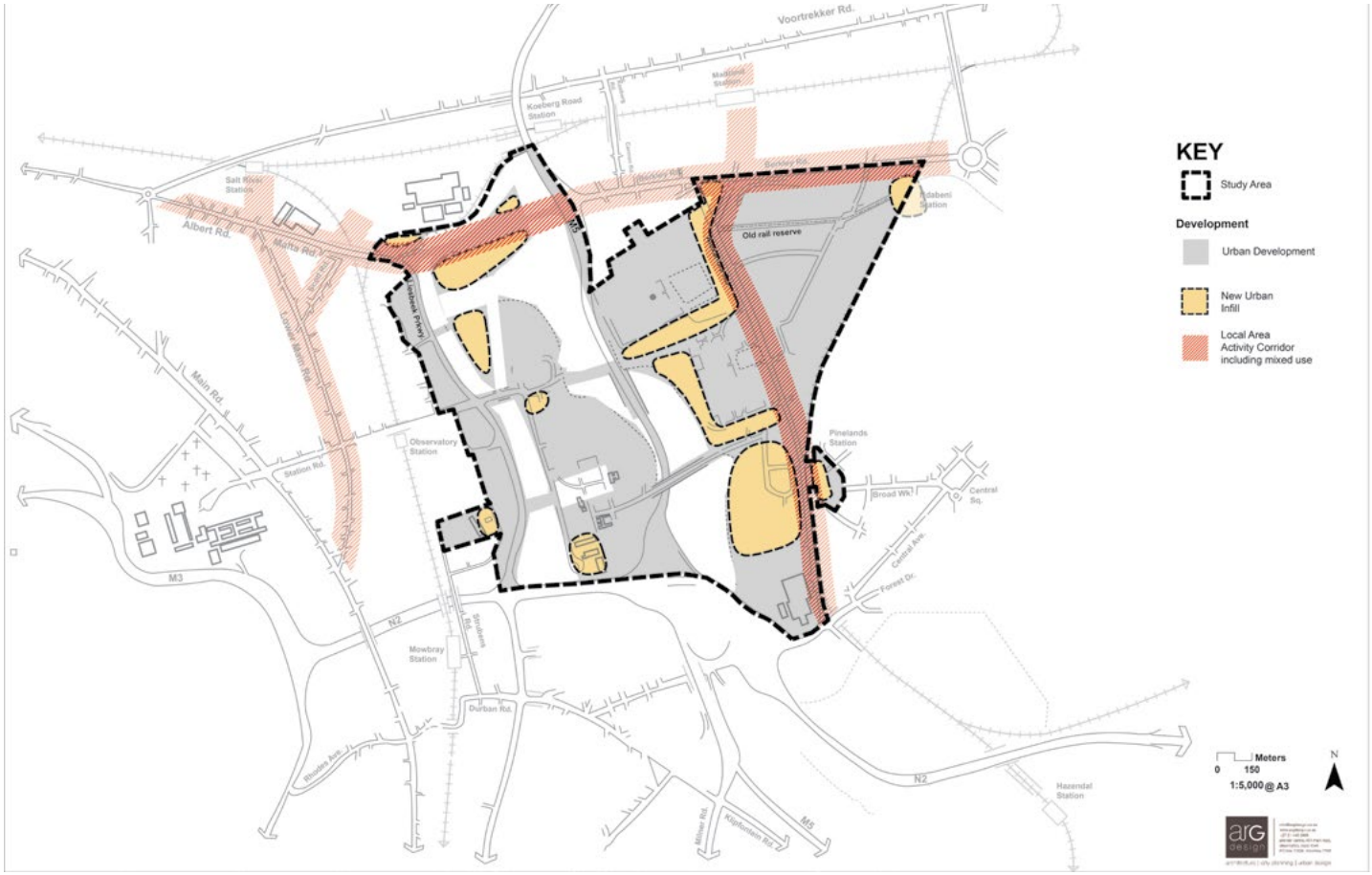
Strengthen east-west linkages between Observatory and Pinelands, Oude Molen and Ndabeni through the development of Berkley Road extension and Station Road extension.

Strengthen north- south activity corridors along Alexandra between Ndabeni and Oude Molen.

Infill and densification

Spatial Strategy

- Densification and higher intensity residential land use within targeted precincts at River Club, Oude Molen, Ndabeni, parts of Maitland Garden Village, parts of Alexandra Institute and the old Bowling Club in Observatory
- Establish the Ndabeni precinct as a mixed use industrially led densification node
- Intensify identified nodes especially TOD nodes around Pinelands Station and along the proposed Berkley Road extension.
- Retain residential character within the Pinelands and Maitland Garden, Garden-Cities/village precinct, except at Pinelands Station Forecourt and possible mixed use opportunities along Alexandra Road to create transit accessible/ well-located residential development.
- Possible Future UDZ along Alexandra Road to encourage redevelopment.



Infill and densification to support activity routes and TOD.

CURRENT SITUATION (DEVELOPED LAND)	**PROPOSED DEVELOPED LAND**
Site = 299.8ha = 100% Current developed portion of the LSDF is 193.6 ha	Vacant/POS/recreational = 86ha = 28,7% (of 299,8ha) Developed = 20.2ha = 6,7% (of 299,8ha) of which the majority is on the eastern side of the Black River.

Containment and Protection:
Spatial Strategy

- Enhance possibilities for cultural and spiritual embodiment and spaces along the river corridors and green network of spaces.
- Protect the environmental integrity of identified biodiversity areas along the river corridors and potential. In particular limited access along the Black River.
- Protect continuity of ecological corridors and linkages with larger river system.
- Protect the integrity of the Hartleyvale/ Malta regional open space system with associated recreational and sports related uses. Public spaces should make up a continuous network of space.
- Maintain integrity of existing public open space throughout the study area.
- Support residential character maintenance in identified areas, with acknowledgement of higher intensity uses along Berkley Road Extension.
- Contain commercial development within identified nodes and nodal boundaries.
- Acknowledge the river corridors (Liesbeek and Black) as strategic land in support of flood mitigation, conservation, NMT support and functional and recreational space.
- Cultural Heritage network as part of continuity and protection

Containment and Protection: River corridors, built and intangible heritage, industrial land.

Structuring Informant Strategic State Land

- Indicating areas for special growth should be based on agreed principles and direct budget allocation and future priority spending.
- Special growth areas can refer to redevelopment of existing development areas to higher intensities, vacant land suitable for infill development as well as greenfield sites.
- Identification of priority state owned development growth nodes and/or precincts.
- Indicating areas to be prioritised for future intervention for higher intensity land use, land exchange and release.

Spatial Strategy

- Promote intensification, mixed use and residential densification along Alexandra and Berkley Road extension and portions of Station Road extension(within Alexandra Institute) in support of activity routes
- Support redevelopment of state owned land at Oude Molen for mixed use development including residential particular around the Pinelands station.
- Support intensification along Alexandra edge of Alexandria Institute
- Support strategic focus as scientific/ industrial hub (CTHP) at Ndabeni.

- Support location of SKA HQ at Observatory Hill and Data centre at Ndabeni

Strategic Land

Structuring Informant: Proposed Movement Network

There is a strong ordering dimension to movement.

Higher densities increase the viability of public transport and should be encouraged along public transport routes.

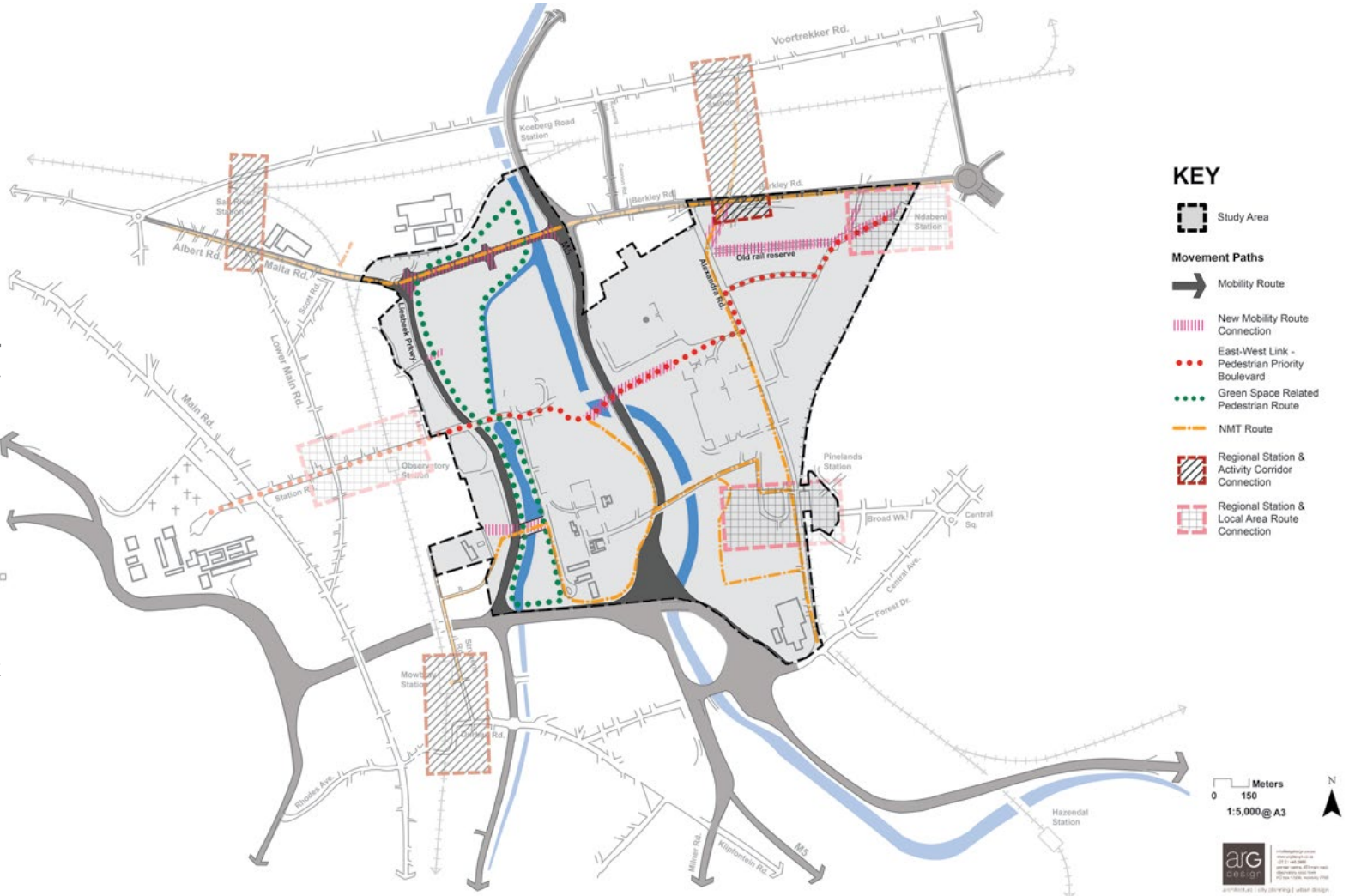
Spatial Strategy

Reinforce missing **east - west links** in the form of Berkley Road extension, Station Road extension(Observatory) PT and a stronger link to Valkenberg and Oude Molen.

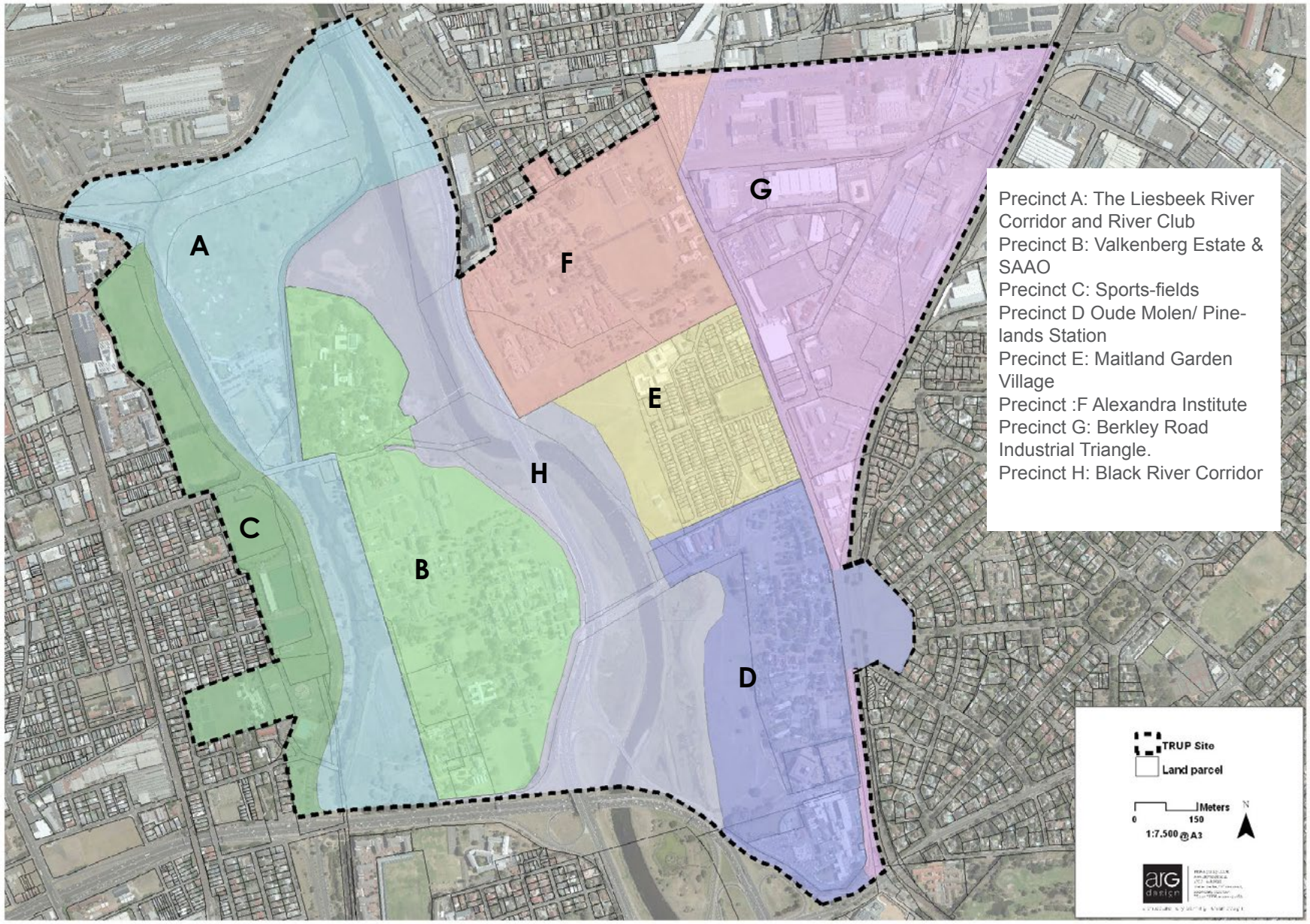
Promote NMT along north south routes at Alexandra Road and along the River corridor.

Primary accessibility corridors :

- North south_ Liesbeek Parkway, M5,
- East West_ Liesbeek Road Extension , Station Road extension
- N2
- Internal access linkages between Oude Molen and around Valkenberg Estate.
- Reinforce development around station precincts especially, Pinelands, Ndabeni, Maitland.



Movement Network



Structuring of LSDF into eight (8) precincts.

Precincts

There are eight precincts with the larger study area, each with their own distinctive characteristics, and often with specific interest groups. Some of the precincts interact with each other, while others do not due to barriers such as freeways and fences.

The Precinct plans apply to specific areas within the development framework that have common features, relationships or phasing requirements. The development objectives and intentions, principles for urban form, land-use etc. are described in this section (Section 8).

Vision

At the strategic level the vision is to strengthen movement links between Two Rivers local area with the rest of Cape Town. Currently, Two Rivers is isolated by the two rivers which limit east west access between Pinelands and Observatory. This is further reinforced by the railway line (Cape Flats) running in a north south direction and the M5.

The gentle river valleys are ecological corridors that contain some critical biodiversity areas (CBAs) and areas of ecological importance as well as providing amenity value for residents. These should be linked to a NMT green route.

The main interventions are to create activity streets at Alexandra and Berkley Road extension that support mixed -use intensification. Strengthen and reinforce The Two Rivers transport and NMT network and link with Cape Town CBD and to provide intensification around transport nodes and routes. This includes:

- Primary transport system comprising M5, Liesbeek Parkway and Alexandra Rd, from south to north with the latter operating as an activity spine as higher order mobility routes. Link roads comprising Berkley Road extension and Station Road extension east west .and Valkenberg Bridge as the public transport and non-motorised transport spines;
- These NMT and Public Transport routes should be treed and landscaped and direct access permitted wherever possible;
- Mixed use intensification areas along Alexandra Road and especially at Oude Molen/Pinelands Station and along the Berkley Road extension and Station Road extension and alongside Alex Institute and the Abattoir site

Of the ±300ha ha making up the Study area, there is currently 106,2ha (35%) open space/sports fields. Of the current Open space, 19.9ha is available to the public. Once the LSDF proposals are developed, there will be 91,9 ha (30,6%) set aside for open space, biodiversity, cultural activity, recreational facilities in the development framework . Of the 91,9 ha, 47,4 ha will now be open to the public. The existing sporting facilities are mostly leased facilities for private use and currently operating at capacity. There are very f**ew existing functional parks** located within the Two Rivers site. Therefore the new linear park will add to the public open space provision.(Note Green Point Urban Park is 10,5ha in size)

Areas that can be developed

	Current situation study area	**Proposals LSDF**
Study Area	299,8 ha	299,8 ha
Open Space available to the Public (Public access)	19.9ha (	47,4ha (increase of 27,5 ha)
Developed Land	193,6 (65%)	213,8ha (20,2ha) (71%)
No. Potential Residential Units		**± 2306 units**** Total residential floor space should be 396 300m
No. Potential Social Housing units		**6118**** compared with Conradie which provides 1260 units.
******These areas are estimated at a high level. Only once detailed planning is completed, can actual floor areas and unit numbers be finalised..		

- The development proposals will result in ±15 000 jobs.

Composite Two Rivers LSDF Diagram

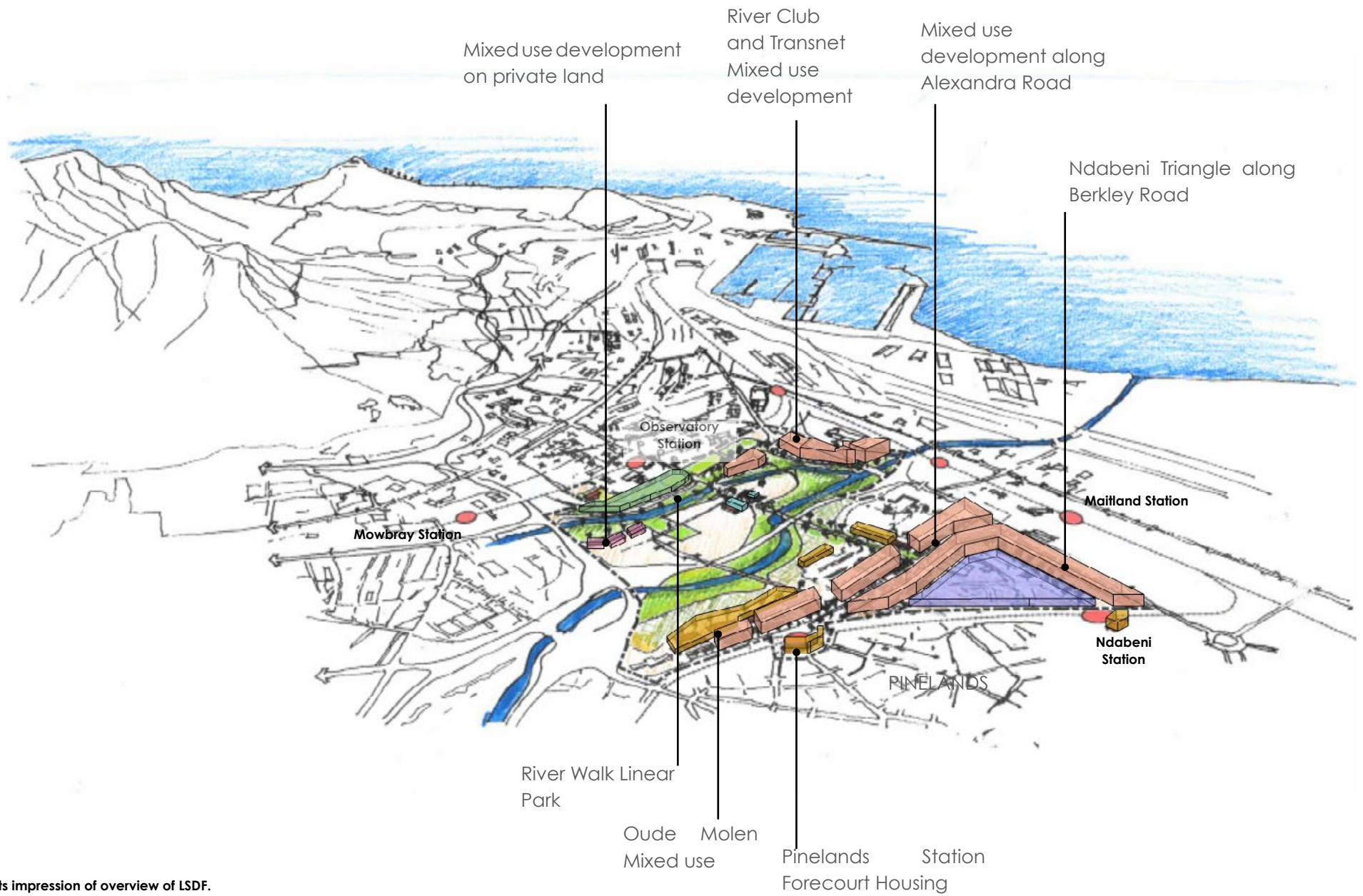
Conclusions

- **Spatial strategy1: Building an inclusive, integrated, vibrant city**

The proposals could result in ±6000 social housing units, ±2300 residential units in the open market,

- **Spatial strategy 2: Manage urban growth, and create a balance between urban development and environmental protection.**
- The proposals could result in approximately an additional 20.2ha of developed land and a more efficient utilisation of existing land; and an increase in publicly accessible open space of an additional 18,7ha bringing this number up to a total of 36.6 ha.(Green Point Urban Park is only 10.5ha) .

- **Spatial Strategy 3: Plan for employment, and improve access to economic opportunities.**
- The proposals will result in ±15 000 jobs. The proposed developable land adjacent to the proposed Berkley Road extension will facilitate the construction of this much needed east- west link. The upgrading of Alexandra Road will allow for intensification of this road as an activity corridor which could result in ±300 000m^2 of GLA on both sides of the road as a mixed use linear set of precincts..
- In order to achieve this, certain infrastructure upgrades are required including
- Athlone Wastewater Treatment Works upgrading (not only for this project- but part of a larger upgrading project of the City.
- Three additional electrical switching stations , upgrades of various water pipelines and the upgrading of the Raapenberg Pump Station and rising main.



Artists impression of overview of LSDF.

2. Background and Purpose

The study area represents an extensive area of publicly owned land that appears to be underutilised and without an overarching local management structure. Various framework documents have been drafted outlining proposals for the study area over the last 20 years.

2.1. Legislative basis for the plan

On the 07 November 2016, the Executive Mayor of the City of Cape Town resolved that a process of Compilation of the Local Spatial Development Framework as prescribed within **Sections 12 to 14, read with Section 11 of Part 3 of the City of Cape Town Municipal Planning Bylaw, 2015** be initiated to align proposals for the Study Area with the new Municipal Spatial Development Framework(MSDF), 2018 for the City of Cape Town and the principles outlined in the Spatial Planning and Land Use Management Act (SPLUMA), 2013 which inter alia address spatial justice spatial restructuring and spatial equity.

2.2. Planning Area Description.

The Two River LSDF is located approximately 5km from the City CBD, at the intersection of the N2, M5 and N1 freeways and at the confluence of the Black and Liesbeek Rivers. The Study Area is approximately 300ha in extent and includes Western Cape Government owned properties such as the Alexandra Hospital(Specialist Mental Health Care facility)Valkenberg Psychiatric Hospital and Oude Molen. City of Cape Town owned properties include parts of Maitland Garden Village, the Maitland Abattoir Site, Diesel Road and land within the Black and Liesbeek River river corridors. Privately owned land is located mainly in the Ndabeni Triangle and includes other properties such as the River Club, parastatals such as the South African Astronomical Observatory, established in terms of the NRF under the Department of Arts, Culture Science and Technology,

2.3. Vision

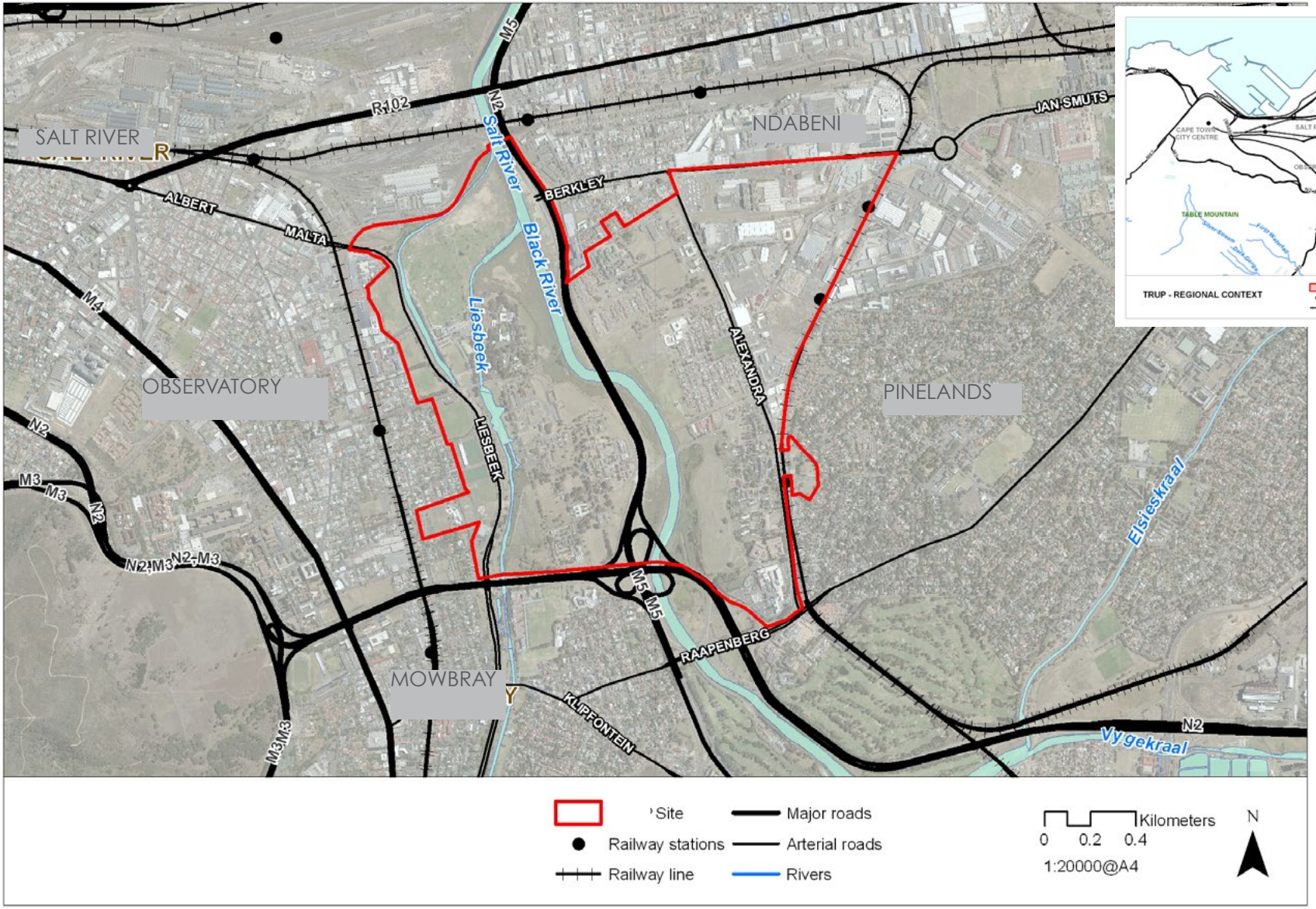
The Local Area is a space of intense contestation that has over time reflected the values of different residents and historical periods in time. However, it is not one homogeneous area and the vision for the local area must celebrate these differences. It is large piece of the City and has an important role to play in spatial restructuring. It is a misnomer to call the entire area an urban park. Although there are parks within the space, it is difficult to shoehorn this diverse space which includes industrial uses and multiple institutions to fit with one single concept of a park. It is possible to maintain the ecological integrity of the river and wetland system without declaring the entire area a park. The site also has a long history dating back to when the First Nation utilised this area and their narrative sits uncomfortably next to the later colonial and apartheid history present on the site.

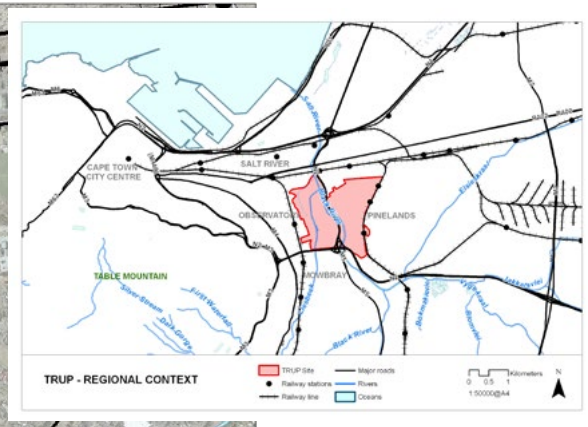
Therefore the vision proposed is that of a :"Mosaic of precincts at the confluence of two rivers that celebrates complex layers of memory, cultural heritage, science and diversity and supports healing, environmental resilience,promotes spatial integration & urban intensification within an efficient mobility network"

2.4. Objectives of an LSDF

The purposes of the City's spatial development frameworks include –

- Providing a longer-term spatial depiction of the desired form and structure of the Study area;
- Providing land use management guidelines regarding the appropriate nature, form, scale and location of development;
- Contributing to spatial co-ordination;
- Guiding investment and planning of municipal departments and where appropriate other spheres of government;
- Guiding investment for the private sector;
- Reflecting relevant provisions of strategies adopted by the Municipal Council; and
- Guiding decision making on applications.





2.2. LSDF Regional locality

Figure 2.1. Two Rivers LSDF Locality

The LSDF should, identify and depict on a map current and future significant elements that give structure or spatial order to a settlement including road circulation networks, public transport systems, public open spaces, public facilities, and external engineering services;
It should provide land use management guidelines that relate to:

- desirable land use patterns;
- appropriate development densities and urban form;
- provision of public open space and public facilities;
- environmentally sensitive areas;
- provide a spatial representation to support spatial restructuring and integration by indicating –
- areas where public and private development should be prioritised and facilitated;
- areas where strategic intervention is required to enable desired changes to land use or urban form;
- locations of future publicly-funded housing developments;
- key infrastructure requirements to enable development of areas that have been prioritised;
- support the municipal spatial development framework by depicting spatially the coordination, alignment and integration of relevant sectoral plans or policies of City departments;
- include an implementation plan

What the LSDF is NOT

- The LSDF does not assign rights or provide detailed design for precincts, but may identify projects or mechanisms to achieve the desired vision for the area.
- The LSDF is not a heritage assessment report and does not provide heritage advice other than to delineate heritage components that need to be addressed in the precinct planning in the future.
- The LSDF does not offer advice on individual and specific applications
- The precinct-level HIAs will align a project with the pre-amble to the NHRA, which speaks to "redressing past inequities", in line with the social justice aims of SPLUMA.

2.5. Metropolitan Spatial Role of the Site.

The Two Rivers LSDF is identified as a catalytic project within the context of the Metro South East Integration Zone(MSEIZ)(It actually is located at the confluence of both MSE- IZ and the Voortrekker Road Integration Zone) . It can contribute to a more compact and integrated City with associated efficiency, productive and resource sustainability gains.

Furthermore its role in the broader sub metropolitan context is supported by the accessibility grid as well as the proposed extension of Berkley Road in City policies which enables greater connectivity for emerging residential intensification and regeneration in areas such as Salt River , Woodstock and Maitland facilitating restructuring of the urban environment.

The site's role at a sub metropolitan level is envisioned as a node for further land use intensification, clustering and reinforcement of economic land uses, social infrastructure and high intensity residential development,while enhancing the river corridors.

From a TOD , transport and heritage perspective, the study area has the ability to address historical spatial and economic imbalances. Its strategic location, development potential and proximity to public transport services, positions the study area as a catalytic project that requires a development strategy that incorporates a mix of land uses, densities and facilitates access to social and economic opportunities.

The MSDF's new spatial vision is one that is based on spatial transformation where social and economic challenges must be placed at the centre of spatial transformative growth. The study area's location within the Urban Inner Core and MSE-IZ is a priority for inward growth, intensification and public investment. The study area's metropolitan role as a lever for urban restructuring and spatial transformation through TOD must be recognised.

From a heritage perspective, the NHRA speaks to "redressing past inequities", through deepening our understanding of society, encouraging

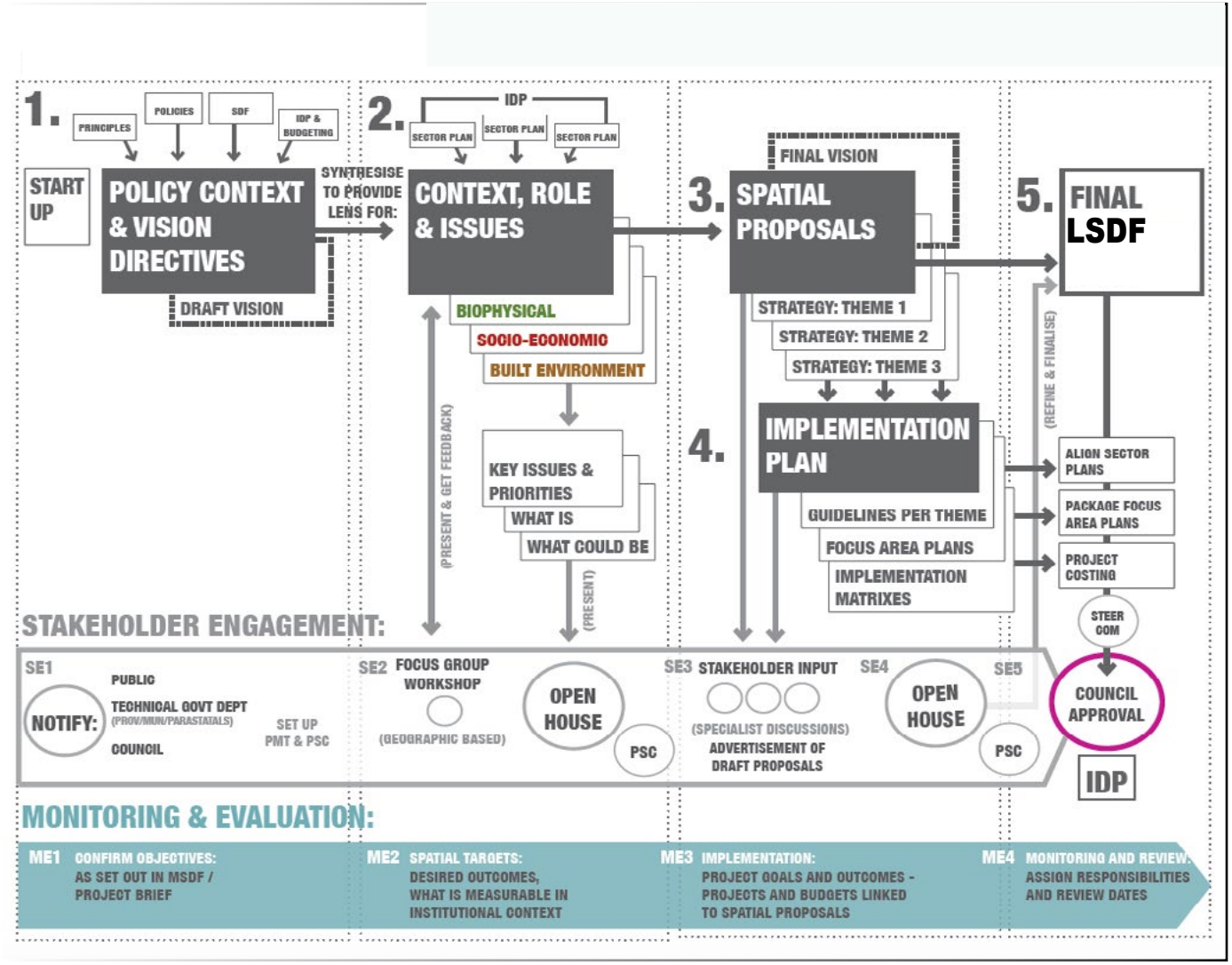
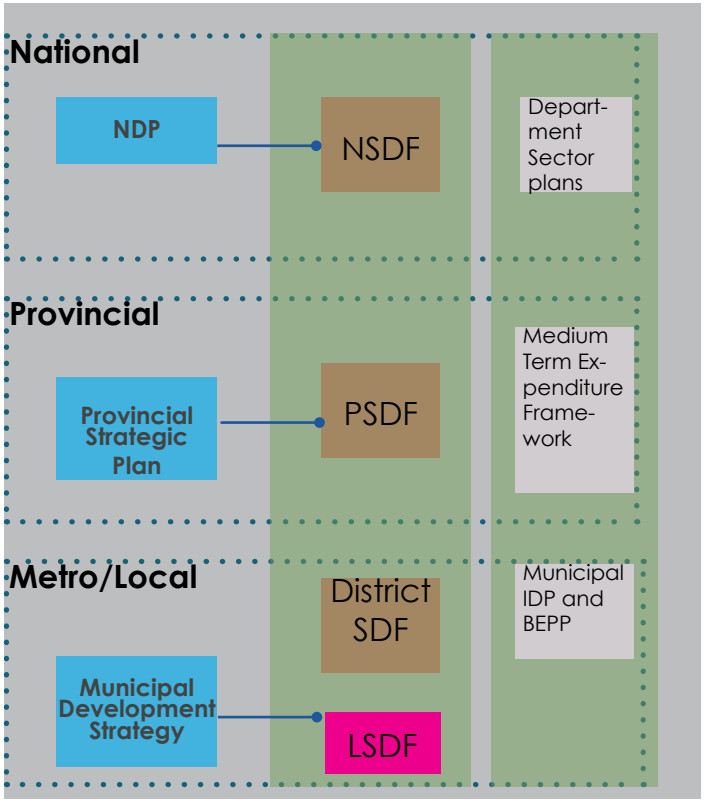


Figure 2.3. Prescribed process

The Planning Process for Local Area Plans is outlined in figure 2.3.

The context and role of the LSDF in relation to other frameworks is illustrated below.



STUDY AREA LSDF (This report)

- Overall policy, broad goals, and principles
- Range of uses,
- General spatial distribution of uses,
- Major transport and pedestrian linkages, infrastructure and any limits, including but not limited to density and floor space.
- No rights are assigned
- Approach to appropriately recognise culture and heritage

PRECINCT PLANS (Later planning)

- Several precinct plans
- Describes in more detail : objectives and intentions for a specific area in the development,(i.e. River Club , Oude Molen etc.)
- Principles for urban form, land use, pedestrian links, traffic movement, floor space and environmental management.

SITE DEVELOPMENT PLANS (Later Planning)

- More detailed design and development
- Details relating to land use, floor space, building lines, height, parking requirements,
- Municipal services and landscaping,
- Position and appearance of buildings, open space, pedestrian links and traffic movement.

Figure 2.4. Roles of different levels of plans

us to empathise with the experience of others, and address the facilitation of healing through both material and symbolic restitution*. (*From preamble to National Heritage Resources Act, 1999, Govt. Gazette). According to HWC, the Two Rivers as a whole could be regarded as one of the single most historically significant sites in the Country.

The area is a mosaic of historically significant spaces and places. It illustrates landscape as a complex layering of memory and history, encompassing multiple eras and peoples.. It must be recognised that these spaces have different meaning for many communities (including the First Nation) and spaces should be created in appropriate places to allow cultural history and different narratives to be acknowledged.

The area currently has a dual character where it has both potent negative and positive effects on the surrounding urban landscape. It is simultaneously an "urban green lung" but also "urban divider". These issues are equally important in heritage terms, and have to be addressed simultaneously, not as discrete issues.

The issue of memorialization is to be addressed in precinct level studies and other legally defined processes, which is supported by this overarching framework. This LSDF cannot supply the detail required for studies of that nature, but provides the principles for this to be taken forward.

The study area's Urban Form has been shaped by a naturally occurring phenomenon at the confluence of two rivers, and the hills and valleys resulting from this occurrence. In addition, it has been shaped by many layers in a history of exclusion: The almond hedge separating First Nation from settler; the Victorian institutions excluding the mentally challenged from society; within Valkenberg excluding the Black Wards from the White Wards; the public excluded from the rivers by exclusive golf courses.

2.6. LSDF Components and Report Structure

The illustration outlines the report format and chapter components, LSDF phasing and components for each phase.

Note:
This LSDF has been informed by Baseline Information and Analysis Reports prepared separately. These were used as an information source and it is not intended that these separate reports be consulted for statutory decision making processes.

Report

Chapter 1 : Executive Summary
Chapter 2: introduction and Purpose/methodology
Chapter 3: Policy Context

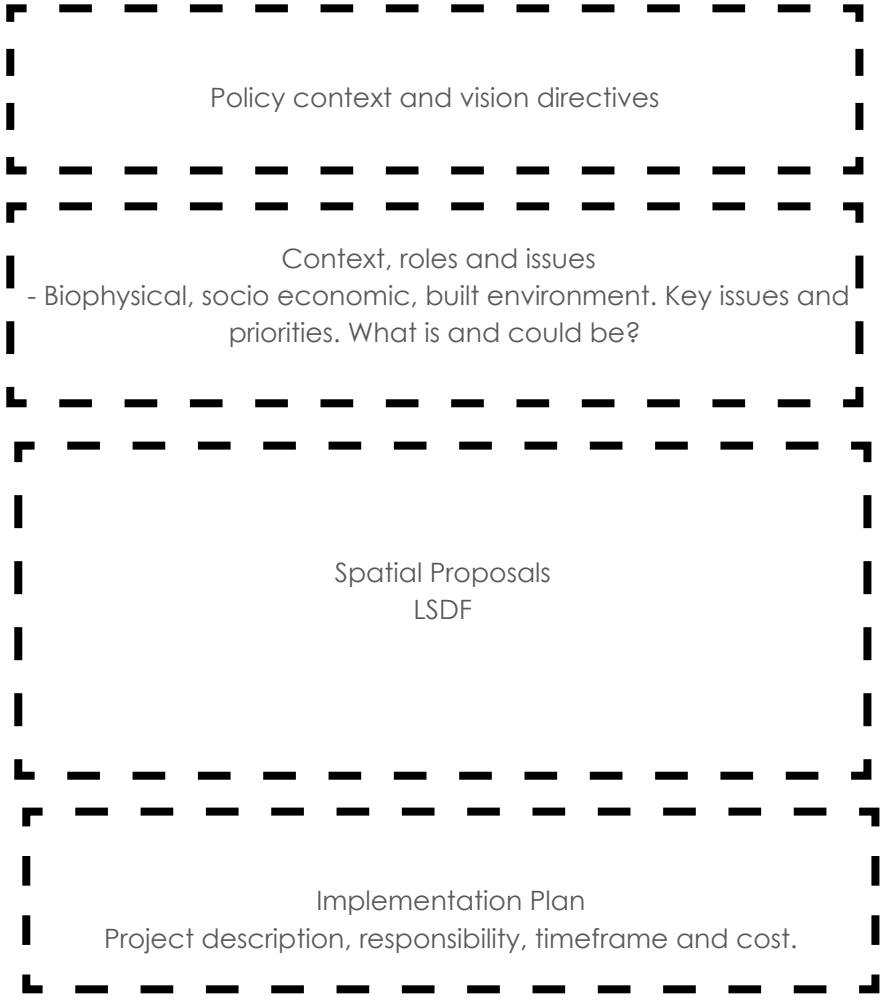
Chapter 4: Status quo/ SWOT (Biodiversity, Socioeconomic, built environment, heritage)
Chapter 5:Summary of Main Informants and Objectives

Chapter 6: Vision: Urban Structuring Informants /Spatial Strategies
Chapter 7: Supporting Policies & Development Directives

Chapter 8: Precincts

Chapter 9: Implementation Framework
Chapter 10: Monitoring , Evaluation and Review

Department of Rural Development &Land Reform (DRDLR) Process phases



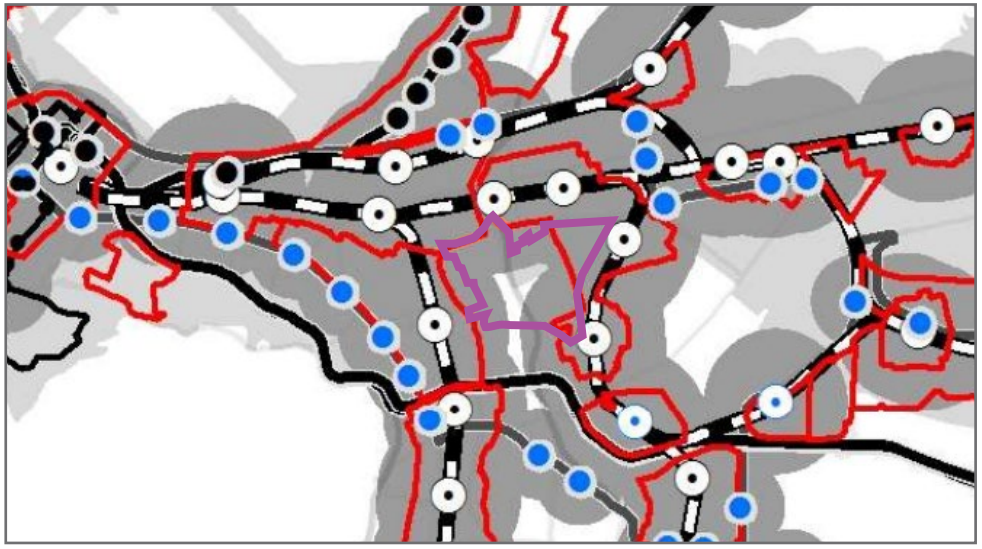


Figure 3.1. Extract from MSDF 2018, TAPS areas

Figure 3.2. Extract from MSDF, 2018 (Zoom in of LSDF) urban inner core

3. Policy Context and Vision Directives

3.1. MSDF, 2018 ,

The Municipal Spatial Development Framework(MSDF)is the Metro-wide spatial plan based upon a spatial transformation premise of "Access to opportunities for people" To achieve this, the City's focus is on inward growth and investment to support infrastructure in support of **dense, diverse and transit oriented land uses.**

To achieve transit-oriented development (TOD) and associated intensification of land use (diversification and densification), the MSDF emphasises strategic location of new development strategically around existing and future public transport services such as the six stations around the precinct, as well as the future Public Transport route along Liesbeek Parkway. This is based on the establishment of an **Urban Inner Core** which favours compact and inclusive integrated development. This site which is strategically located at the confluence of the two integration zones, as well as its proximity to six rail stations is at an important knuckle within the larger City structure and is located within the Urban Inner Core.

- **Spatial strategy 1: Building an inclusive, integrated, vibrant city.** This includes the transformation of the apartheid City through well located integrated (including public led)housing and amenities on this well located site. The site offers the opportunity to redress some of these inequalities by providing social housing opportunities on well located land. At the same time celebrating Cape Town's diverse historical legacies through appropriate management of urban form, architectural design, signage and artwork.

- **Spatial Strategy 2: Manage urban growth, and create a balance between urban development and environmental protection.** This can be achieved through a higher density of development with a compact

- Corridors and associated wetlands in the LSDF . The river corridors should be improved and the canals transformed into a more natural cross section. The cultural heritage layers should be brought to the fore and acknowledged.

- **Spatial Strategy 3: Plan for employment, and improve access to economic opportunities.** This strategy promotes economic growth and development that supports public transit. The LSDF is surrounded by 6 railway stations within a 1 kilometre walking distance to parts of the study area. It is therefore and area where greater intensification should be promoted.

- **Investment Rationale in Urban Inner Core (UIC)**
- The City of Cape Town has committed to spatially targeting investment within the Urban Inner Core(indicated in blue in figure 3.2) within which the LSDF clearly lies. As a large portion of the study area consists of state owned land , this is an area which should promote intensification.
- According to the MSDF , An increase in the number of households, and the changing population structure, is of particular relevance to the supply and demand for housing with both the number and type of housing affected. The overall demand for housing increased from approximately 15 000 per year in 2005 to 20 000 in 2015. There is a backlog of 350 000 housing opportunities in the City overall. This site can provide opportunities for at least 2500 households in the gap market.

- **Land Use Model:** The City developed a range of land use and transportation scenarios which had to illustrate the potential spatial patterns/ location for a 20-year period. The scenarios were based on creating a more balanced and efficient city, linked directly to the optimum functioning of the transportation network. The diagram (Figure 3.3 on page 38)illustrates Future land use mix and intensity per Transport Analysis Zone based on the scenario used and the extract for Two Rivers is illustrated. This illustrates the need for additional residential (yellow) and commercial (red) development for this site.

- The site falls within the Urban Inner Core, an area designated for targeted investment by the City.

- The implication of Cape Town's spatial, social and economic challenges are that it must place sustained job generating economic growth at the heart of its spatial priorities. This means supporting investment in well-located growth nodes(such as Two Rivers), reinforcing transit-oriented corridors and linking growing nodes with lagging nodes through connective infrastructure.

- The MSDF specifically allocates Two rivers as a TOD area and catalytic project.

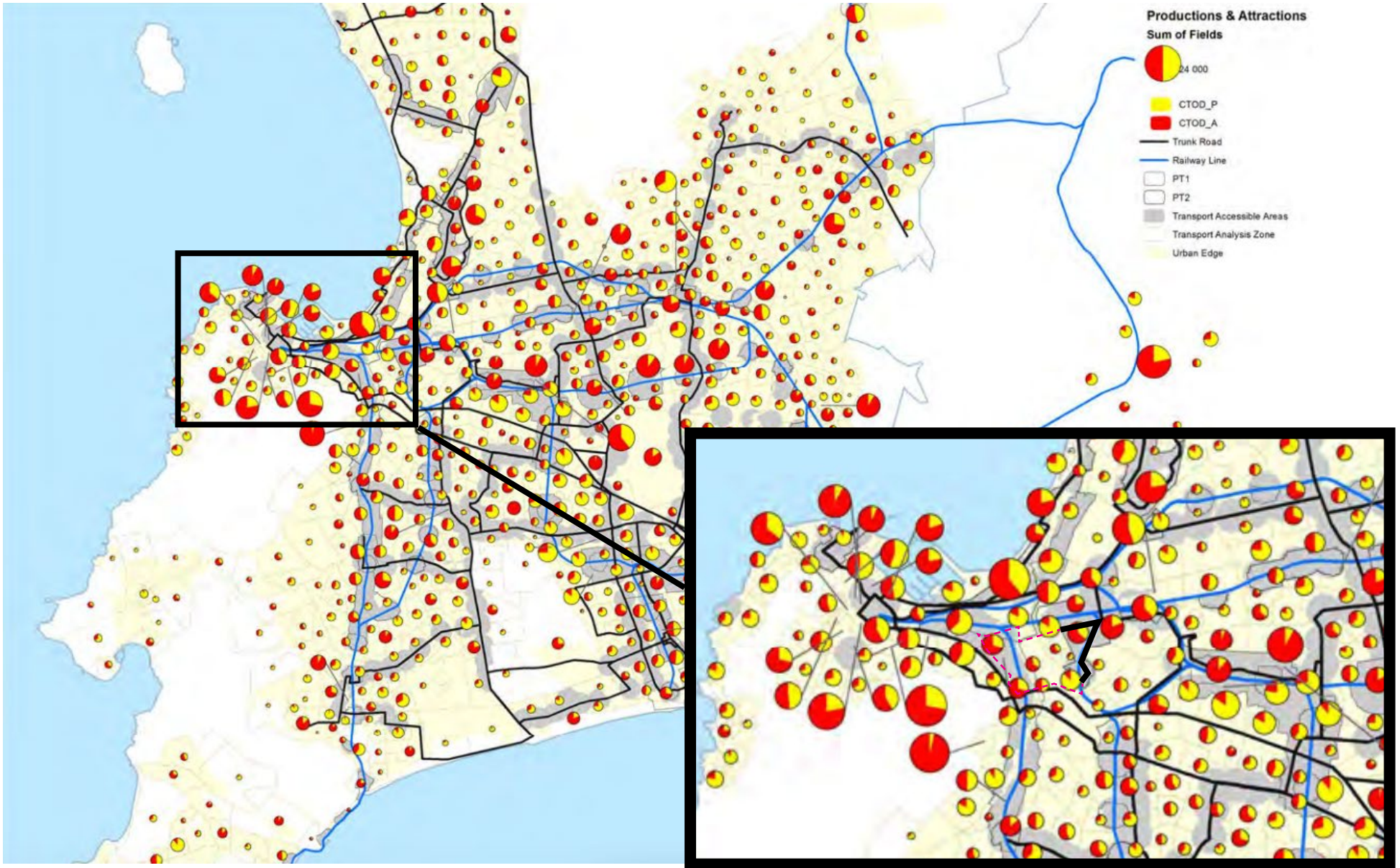


Figure 3.3. Future land use mix and intensity per Transport Analysis Zone based on TOD C (Source: MSDF, 2018) Red indicates demand for non residential; yellow indicates demand for housing.

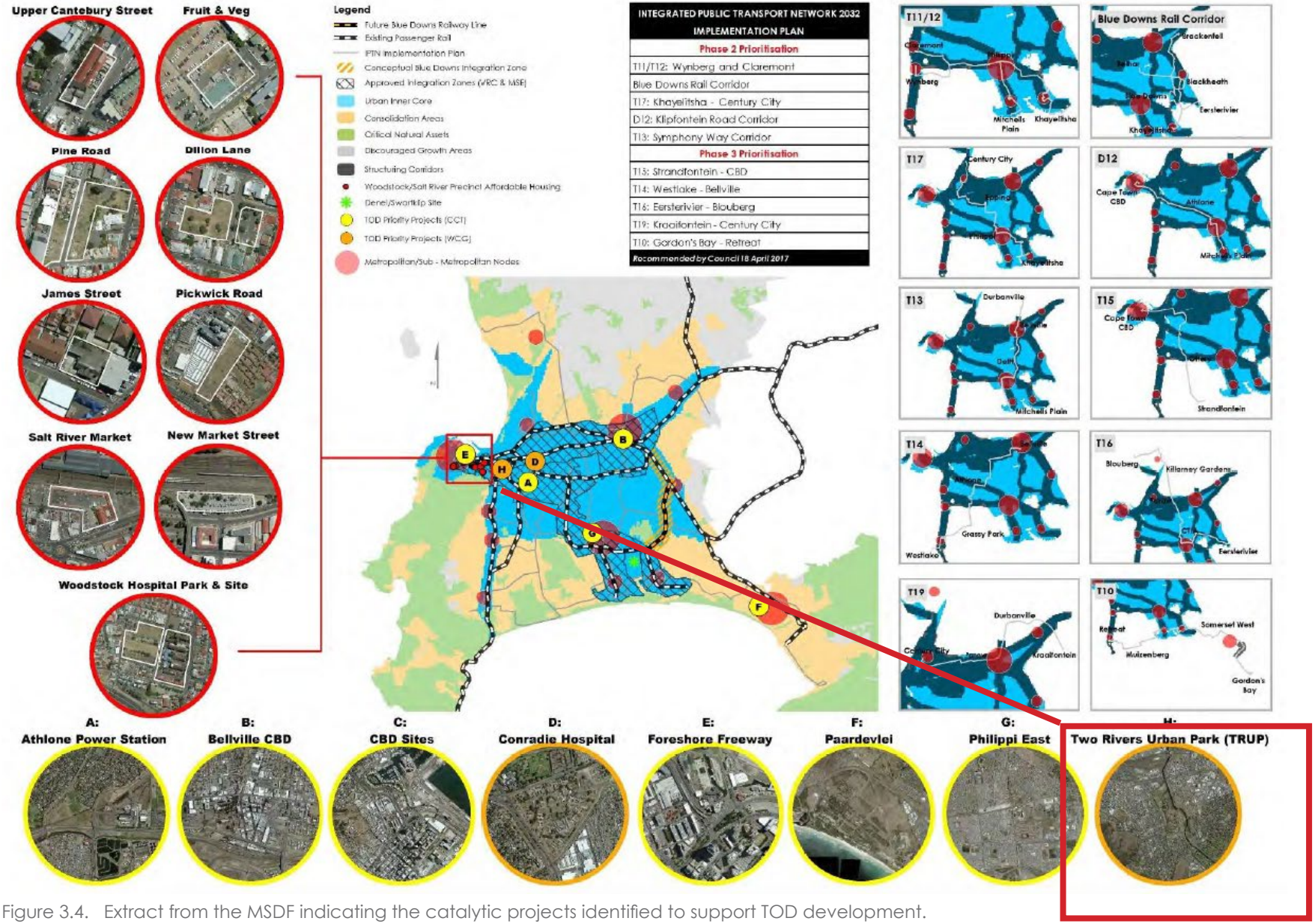


Figure 3.4. Extract from the MSDF indicating the catalytic projects identified to support TOD development.

3.2. Table Bay District Plan , 2014

The District Plan's objectives include the protection of key resources of environmental and economic value by effectively managing and guiding urban development towards appropriate areas. This includes the consolidation of open space and the protection of flood-prone areas from inappropriate development.

Parts of the LSDF is located in a zone that is designated as Open Space, Core 2 and buffer. Any proposals in this area will therefore require an amendment to the District Plan. The SAAO is indicated as green, as well as most of Valkenberg, River Club and the Transnet shunting yards. This is clearly inaccurate,therefore some ground-truthing is required. For example, the SAAO and Valkenberg have heritage status and cannot be converted to open green areas. While the River Club and Transnet land are privately owned.

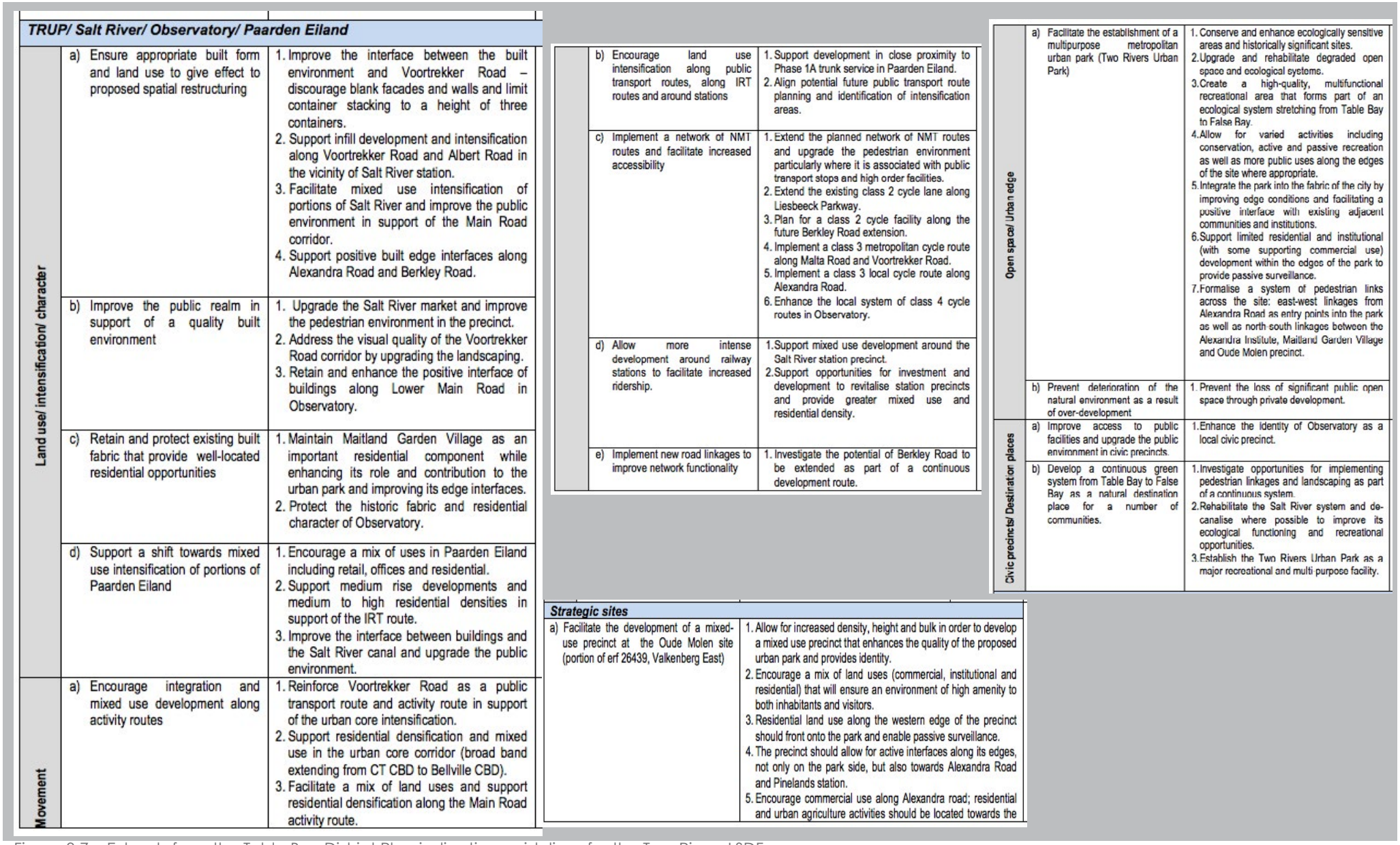
The District Plan also promotes the development of vacant public land and infill sites within the urban edge. A compromise is therefore required to rationalise the open space system by encouraging development of specific portions of the open space to allow greater utilisation and activity as well as passive surveillance.

Note that the District Plan makes the following provision for **biodiversity corridors** which are located within proposed urban areas. **The extent of the biodiversity corridor is indicative and precise configuration should be determined through relevant land use and statutory processes including, but not limited to a local development framework as part of future land use applications.**

-The District Plan specifically promotes the formalisation of the Two Rivers LSDF as a component of a **coast to-coast green system**. This cannot apply to the full extent of the LSDF which includes inter alia Ndabeni and Oude Molen. However, this must be implemented along the river corridors. The District Plan also promotes the **proposed extension of Berkley Rd that connects with Malta Road/** Albert Road (Lower Main) and continues up to Christiaan Barnard.

Figure 3.5. Extract from Table Bay District Plan showing green web

Figure 3.6. Extract from Table Bay District Plan showing nodes



TRUP/ Salt River/ Observatory/ Paarden Eiland

Land use/ intensification/ character	a) Ensure appropriate built form and land use to give effect to proposed spatial restructuring	1. Improve the interface between the built environment and Voortrekker Road – discourage blank facades and walls and limit container stacking to a height of three containers. 2. Support infill development and intensification along Voortrekker Road and Albert Road in the vicinity of Salt River station. 3. Facilitate mixed use intensification of portions of Salt River and improve the public environment in support of the Main Road corridor. 4. Support positive built edge interfaces along Alexandra Road and Berkley Road.
	b) Improve the public realm in support of a quality built environment	1. Upgrade the Salt River market and improve the pedestrian environment in the precinct. 2. Address the visual quality of the Voortrekker Road corridor by upgrading the landscaping. 3. Retain and enhance the positive interface of buildings along Lower Main Road in Observatory.
	c) Retain and protect existing built fabric that provide well-located residential opportunities	1. Maintain Maitland Garden Village as an important residential component while enhancing its role and contribution to the urban park and improving its edge interfaces. 2. Protect the historic fabric and residential character of Observatory.
	d) Support a shift towards mixed use intensification of portions of Paarden Eiland	1. Encourage a mix of uses in Paarden Eiland including retail, offices and residential. 2. Support medium rise developments and medium to high residential densities in support of the IRT route. 3. Improve the interface between buildings and the Salt River canal and upgrade the public environment.
Movement	a) Encourage integration and mixed use development along activity routes	1. Reinforce Voortrekker Road as a public transport route and activity route in support of the urban core intensification. 2. Support residential densification and mixed use in the urban core corridor (broad band extending from CT CBD to Bellville CBD). 3. Facilitate a mix of land uses and support residential densification along the Main Road activity route.
	b) Encourage land use intensification along public transport routes, along IRT routes and around stations	1. Support development in close proximity to Phase 1A trunk service in Paarden Eiland. 2. Align potential future public transport route planning and identification of intensification areas.
	c) Implement a network of NMT routes and facilitate increased accessibility	1. Extend the planned network of NMT routes and upgrade the pedestrian environment particularly where it is associated with public transport stops and high order facilities. 2. Extend the existing class 2 cycle lane along Liesbeeck Parkway. 3. Plan for a class 2 cycle facility along the future Berkley Road extension. 4. Implement a class 3 metropolitan cycle route along Malta Road and Voortrekker Road. 5. Implement a class 3 local cycle route along Alexandra Road. 6. Enhance the local system of class 4 cycle routes in Observatory.
	d) Allow more intense development around railway stations to facilitate increased ridership.	1. Support mixed use development around the Salt River station precinct. 2. Support opportunities for investment and development to revitalise station precincts and provide greater mixed use and residential density.
	e) Implement new road linkages to improve network functionality	1. Investigate the potential of Berkley Road to be extended as part of a continuous development route.
Open space/ Urban edge	a) Facilitate the establishment of a multipurpose metropolitan urban park (Two Rivers Urban Park)	1. Conserve and enhance ecologically sensitive areas and historically significant sites. 2. Upgrade and rehabilitate degraded open space and ecological systems. 3. Create a high-quality, multifunctional recreational area that forms part of an ecological system stretching from Table Bay to False Bay. 4. Allow for varied activities including conservation, active and passive recreation as well as more public uses along the edges of the site where appropriate. 5. Integrate the park into the fabric of the city by improving edge conditions and facilitating a positive interface with existing adjacent communities and institutions. 6. Support limited residential and institutional (with some supporting commercial use) development within the edges of the park to provide passive surveillance. 7. Formalise a system of pedestrian links across the site: east-west linkages from Alexandra Road as entry points into the park as well as north-south linkages between the Alexandra Institute, Maitland Garden Village and Oude Molen precinct.
	b) Prevent deterioration of the natural environment as a result of over-development	1. Prevent the loss of significant public open space through private development.
Civic precincts/ Destination places	a) Improve access to public facilities and upgrade the public environment in civic precincts.	1. Enhance the identity of Observatory as a local civic precinct.
	b) Develop a continuous green system from Table Bay to False Bay as a natural destination place for a number of communities.	1. Investigate opportunities for implementing pedestrian linkages and landscaping as part of a continuous system. 2. Rehabilitate the Salt River system and de-canalise where possible to improve its ecological functioning and recreational opportunities. 3. Establish the Two Rivers Urban Park as a major recreational and multi purpose facility.

Strategic sites

a) Facilitate the development of a mixed-use precinct at the Oude Molen site (portion of erf 26439, Valkenberg East)	1. Allow for increased density, height and bulk in order to develop a mixed use precinct that enhances the quality of the proposed urban park and provides identity. 2. Encourage a mix of land uses (commercial, institutional and residential) that will ensure an environment of high amenity to both inhabitants and visitors. 3. Residential land use along the western edge of the precinct should front onto the park and enable passive surveillance. 4. The precinct should allow for active interfaces along its edges, not only on the park side, but also towards Alexandra Road and Pinelands station. 5. Encourage commercial use along Alexandra road; residential and urban agriculture activities should be located towards the

Figure 3.7. Extracts from the Table Bay District Plan indicating guidelines for the Two Rivers LSDF area.

This proposed development route would result in an important linkage that stretches from the CBD into other districts.

Transit Station Areas: Pinelands and Observatory Allow for moderately scaled densification where appropriate in a manner that is sensitive to existing preservation worthy character and subject to infrastructure availability.

Retain opportunities for Park and Ride, subject to local assessments and transport planning.

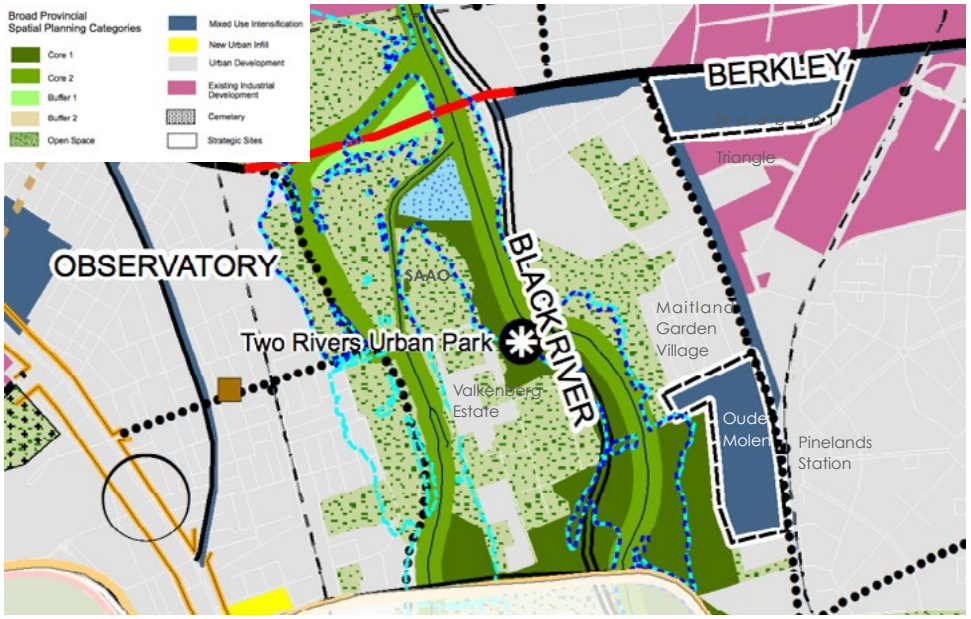


Figure 3.9. Extract from Table Bay District Plan showing the study area(2012)

Although a coast to coast green system is supported, the extent and nature of this green corridor is conceptualised differently from this LSDF. In addition, the MSDF, 2018 promotes intensification of this area.

3.3. IPTN (2030)

The Integrated Public Transport Network (IPTN) aims to improve the public transport network premised on MyCiTi and an expanded rail network.

The City's delivery of integrated transport is based on the IPTN Network Plan 2032. "Integrated", however, should not just be confined to transport but should also mean the integration of transport with land use. For the City, this means the use of transit-oriented development **(TOD)** to bring about the spatial transformation of Cape Town itself as well as the building of sustainable communities.

The LSDF is an area potentially well-served by public transport. The City

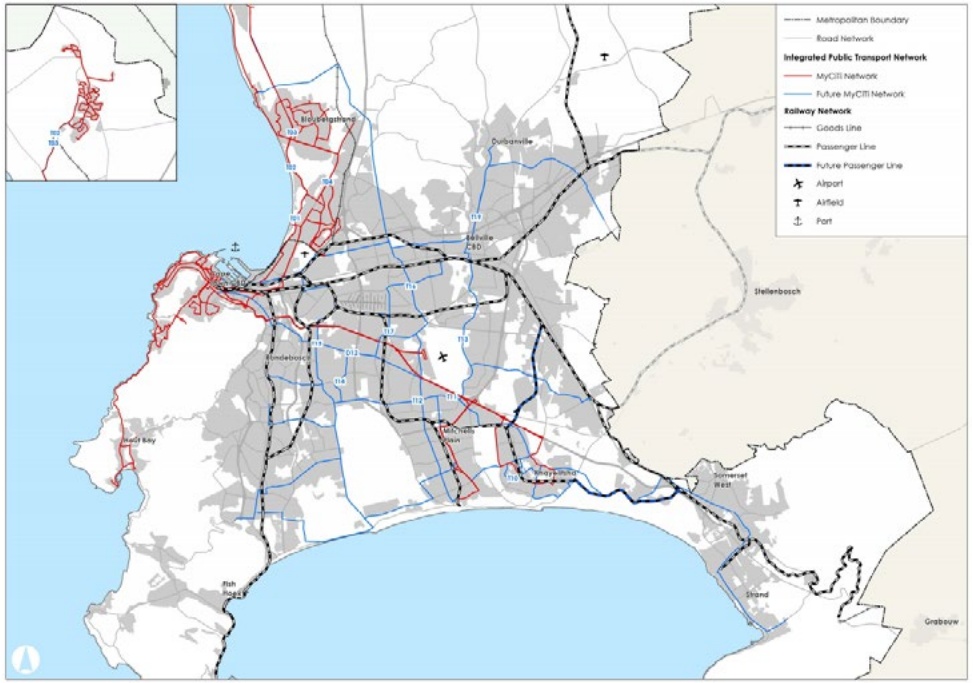


Figure 3.8. Extract from IPTN indicating new road proposals.-

adopted a TOD comprehensive land use model that addresses both greenfield and brownfield development: The intensification and densification of land use along rail corridors is also a key part of the City's TOD Strategic Framework. This means that new development in Cape Town should be strategically located around PT, have an appropriate mix of land uses and be located in the right areas and promote high quality of public space

According to this policy, the City should deploy its strategically located land holdings and partner the private sector to lead by example to achieve TOD.

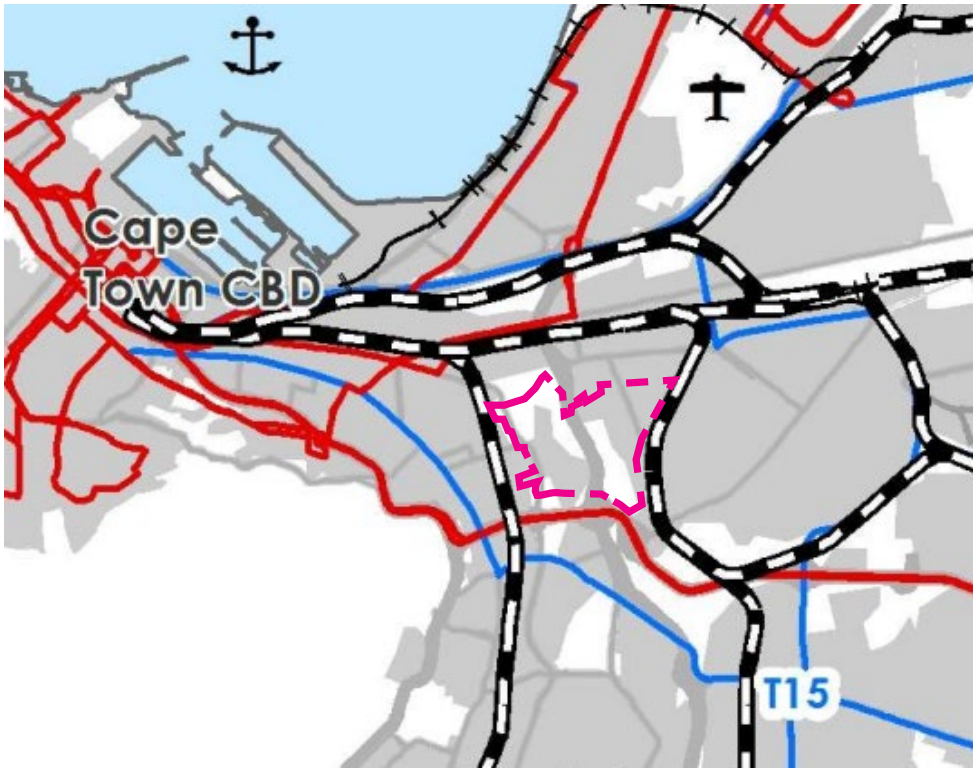


Figure 3.10. Extract from the IPTN (Zoomed in view of study area)showing proximity to transport corridors.

The LSDF therefore is a key strategically located land holding. As part of this model, the following projects are identified in the IPTN:

New Roads: Berkley Road extension westwards to Liesbeek Parkway
TOD Catalytic projects: Two Rivers is identified as a TOD Catalytic Project
IRT: The nearest trunk / distributor route is D12 – a route linking the Metro South East to Cape Town CBD via Klipfontein Road.D12 is planned to run along Main Road west of the proposed development, which is not within acceptable walking distance. Therefore, feeder services would be required to link the LSDF to this route. According to the approved IPTN 2032 Implementation Plan, Route D12 is listed as one of the top 5 priorities for implementation.

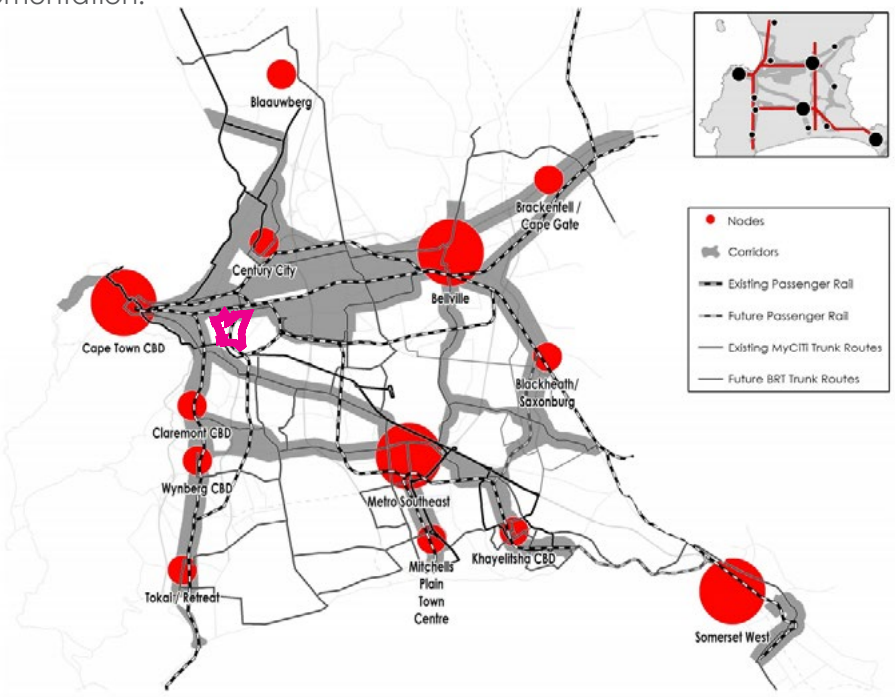


Figure 3.11. Extract from IPTN showing nodes and transport corridors(study area indicated in pink).

3.4. NMT Strategy (CoCT) 2005

Non-motorised transport (NMT) includes all forms of movement that do not rely on an engine or motor for movement. This includes walking, cycling, rickshaws, animal-drawn carts (especially in rural areas) and roller-blading or skating for recreational purposes.

Areas where NMT priority should be given consideration, according to the policy, of relevance to the study area include: Public transport interchanges, rail stations, heritage sites, conservation areas (where appropriate), and recreational areas/ routes. The NMT Strategy promotes NMT development in certain priority zones indicated in green in Figure 3.8. The study area is on the edge of the green zone, but can easily be linked in via its northern and western edges - (Berkley and Liesbeek).

3.5. COCT IDP (2017-2022)

The study area was Identified as a Prioritised project in terms of the IDP.
The City of Cape Town challenges identified in the IDP include the following:
Socio- economic: Cape Town needs to expand its economy further to create more employment opportunities. The importance of social inclusion is a strategic priority. The LSDF should therefore address these issues.
Biophysical: Future development should be assessed for, inter alia, environmental impact. Efforts are required to improve resource efficiency.
Urban: A major concern is mobility, as it affects urban efficiency.

3.6. TOD Strategic Framework(2015)

The Cape Town City took the decision to investigate a TOD approach to addressing urban inefficiencies in Cape Town through the development of Transit Oriented Development Comprehensive(TOD-C) land use scenarios.

The objectives of TOD for the local area is to establish specific land use and design guidelines to manage and guide the growth and form of precinct development in line with TOD principles and strategies (including NMT

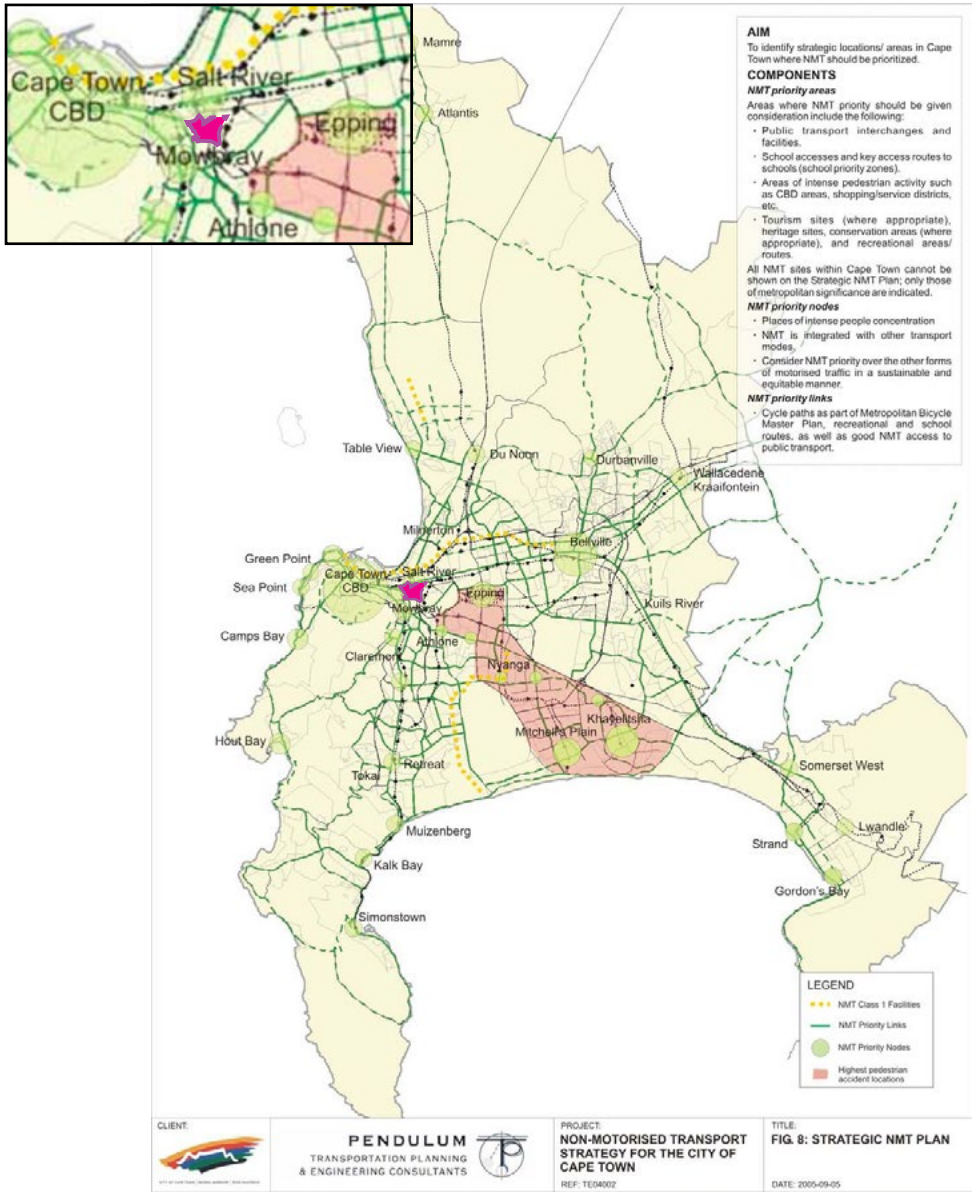


Figure 3.12. Extract from NMT strategy: Strategic NMT Plan

Strategy).

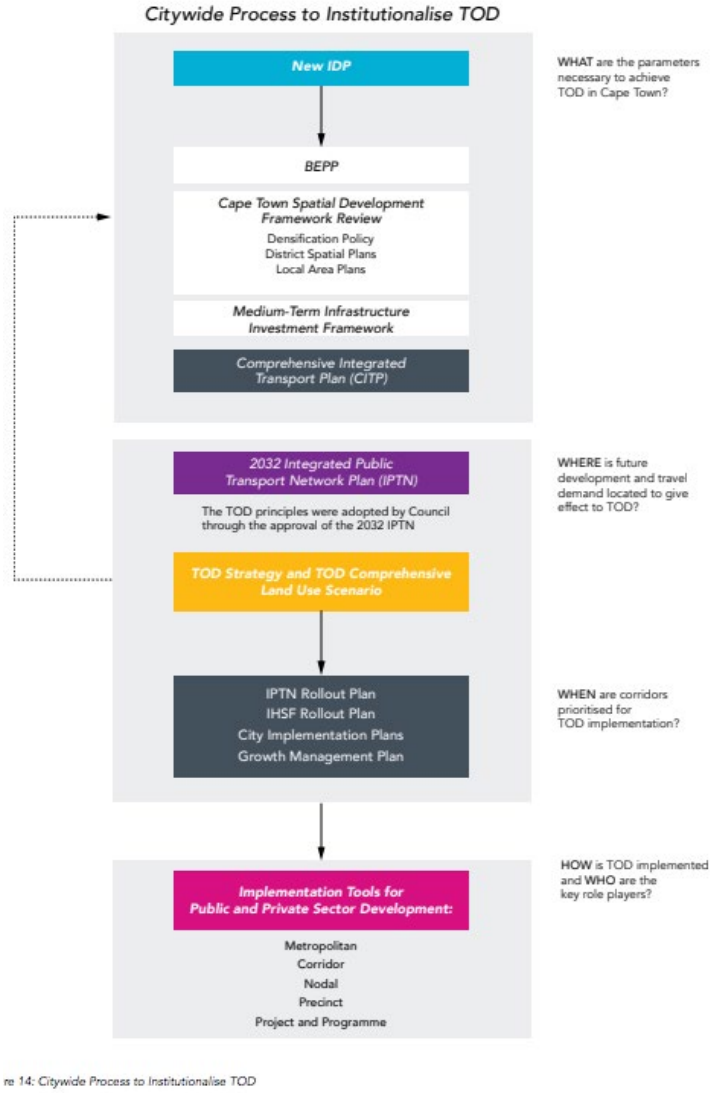
This includes Mechanisms to stimulate private sector development and leverage public investment in TOD. In the case of this local area, although much of the study area is not within a Transport Accessible Precinct (TAP) area, or directly within a transport corridor, The diagrams indicate at a gross level that there is a transport demand in this local area.

Based on the policy analysis the following is a summary of the LSDF future role within its municipal context and why it is a priority.

The study area represents a significant area of underutilised, state owned and private land, strategically placed within the Urban Inner Core (UIC) of the City. The proximity to Public Transport and the opportunities offered to promote integration demand that state finances are utilised to unlock the development potential of the TR-LSDF.

At the same time, the ecological role of the river corridors, the importance as a regional sports amenity and the significance placed on the layers of cultural and built heritage must be acknowledged and enhanced.

The following chapter highlights the context of the study area.



re 14: Citywide Process to Institutionalise TOD

Figure 3.13. Citywide process to institutionalise TOD.

3.7. Environmental Strategy for the City of Cape Town (No.46612) 2017

Vision: To enhance, protect and manage Cape Town's natural and cultural resources for long term prosperity, in a way that promotes access and social well- being, and optimises economic opportunities.

According to the policy: "*Cape Town faces a number of socio-economic challenges: the city struggles with high levels of unemployment, poverty, inequality, crime, and social injustice and, although steps are being taken to address these challenges, they remain significant, impacting on the environment and related resource sustainability.*"

The City's approach to managing its environmental assets must occur within a framework that recognises and addresses the above-mentioned social and economic challenges.

Four cross-cutting themes are identified, that underlie the four strategic focus areas for the environmental strategy. They are:
1. Enabling the green economy within Cape Town, focusing on, amongst others: low-carbon, resource efficient, and socially inclusive economic development, and reducing environmental risks and ecological scarcities
2. Environmental compliance and law enforcement – in both the City's own operations and of business and external stakeholders - including defining the applicable legislation and enforcing the applicable regulations and legislation, as well as implementing proactive compliance and best practice measures
3. Environmental education, awareness, and communication, with a focus on voluntary behaviour change
4. Climate change, focusing on both adaptation and mitigation, and building a city that is resilient to climate change impacts .

Any development within the City should refer to the relevant environmental strategies outlined in Figure 3.14 on page 46.

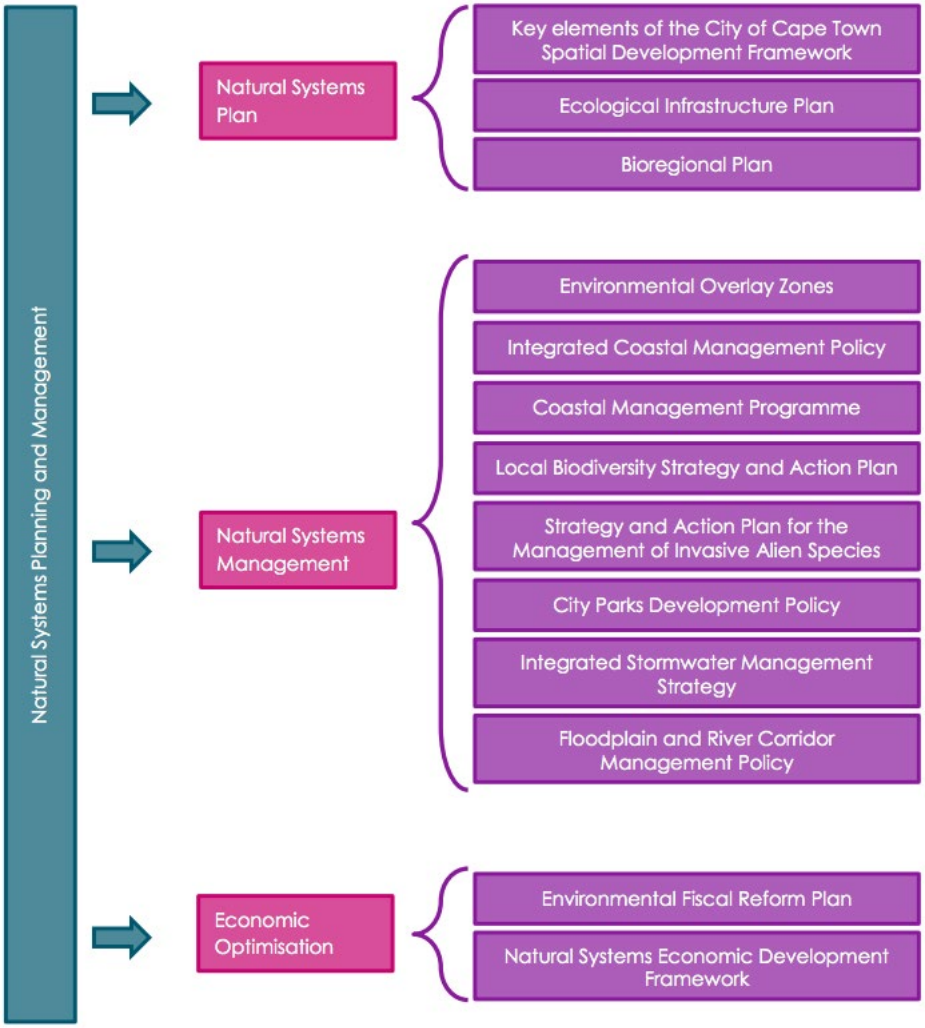


Figure 3.14. Natural systems planning and management framework

Of particular relevance to this LSDF is section 6.11. Protected Cultural Heritage. Cape Town's cultural heritage as it relates to the built environment is a significant economic and social asset, and contributes significantly to the unique sense of place, strong global identity, and community spirit that is characteristic of the city.

Principle

In taking decisions, operating, and planning for the future, the City will ensure that the value of the city's cultural heritage is recognised, protected and promoted, and that the benefits and opportunities it provides to communities are realised(See summary of heritage management policy below). Figure 3.15

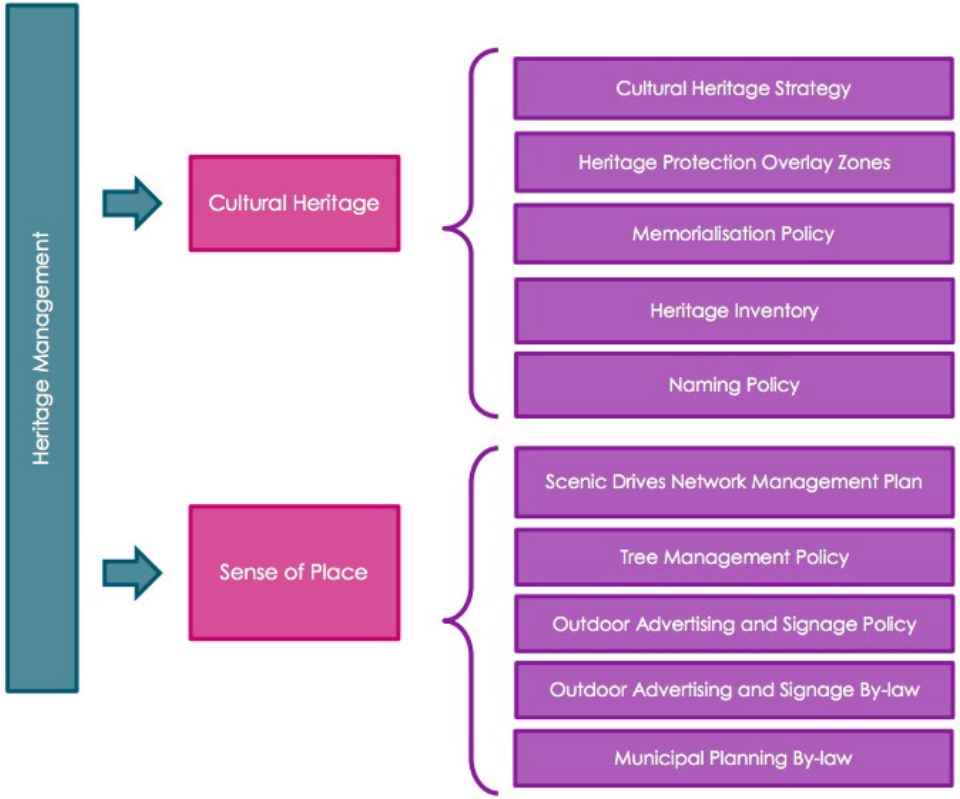


Figure 3.15. Heritage Management Policy Framework.

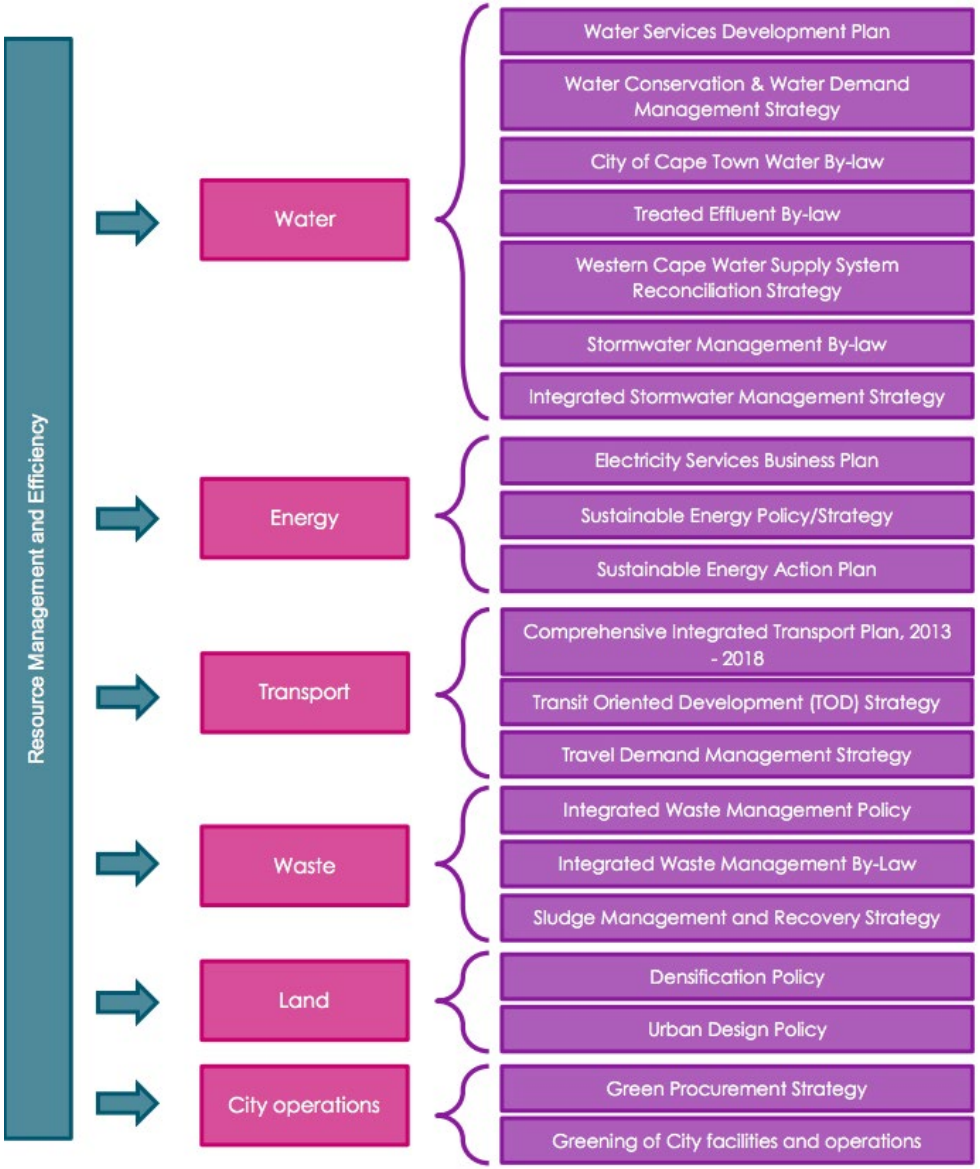


Figure 3.16. Resource Management Policy framework.

4. Context, Role and Issues

4.1. Biophysical

The biophysical analysis distinguishes between sensitive land, protected, biodiversity corridors and buffers.(Illustrated in figure 4.1)

An imperative is the functional integrity and connectivity of ecosystems to facilitate easy movement of fauna and growth of flora. Urban development must respect the presence, role and function of natural assets, and develop in a complementary manner making the most of the possible benefits residents and visitors can derive from them. The biophysical assets include:

4.1.1. Environmental sensitivity areas

Land (Terrestrial habitats)

The study area falls in the West Coast Renosterveld bio-region and the Southwest Fynbos bio-region, and is part of the Fynbos biome, located within what is now known as the Core Region of the Greater Cape Floristic Region.

However, the site is mostly transformed (estimated (as much as >90%). This implies that pristine habitat has been replaced by urban development and landscaping. Some of the wetlands at the confluence of the Liesbeek and Black Rivers may be relatively undisturbed, however there is almost no natural vegetation remaining.

A part of the site(along the river corridors) is inhabited and visited by various faunal species, making this area important habitat for fauna(such as the Western Leopard Toad) despite the degraded nature of the floral population.].

The attached diagram(Figure 4.1 on page 50) indicates:

Ecologically sensitive botanical species(i.e. untransformed areas).

Less sensitive species: The pink delineated areas are those areas which are less sensitive (largely transformed area) but, which still hold ecological importance due to their habitat or contribution to ecological functioning,

For instance, the River Club site does not hold avifaunal importance(birds, bats), but, parts of it are important to several other faunal species mostly listed as *Least Concern*, except for the Cape Dwarf Chameleon which is listed as Vulnerable (which possibly **may** occur on the River Club and Observatory grounds). As a result, the area north of the existing River Club development, is considered as an important faunal habitat for ecological connectivity. The area shown as **'Medium sensitivity'** for fauna, excludes the 'contaminated' land(Transnet site).

Critically endangered species: Four patches of Moraea aristata (blou-oog uintjie) are identified on the SAAO grounds. This is a critically endangered red list species,

River &Wetlands (Riparian ecosystem)

The main **freshwater** features within the study area are the lower reaches of the Liesbeek and Black Rivers. The ecological function of these rivers is considered to be largely to seriously modified, and both support hardy species of invertebrates and alien fish species. However, the Liesbeek River appears to be in slightly better condition , and may support the endemic Cape Galaxias fish in the upper reaches of the river. The water quality is still not adequate for recreational activities – contact with the water should be avoided

Some aspects that should be noted specifically with regards to the Liesbeek River:

- The Liesbeek Canal (eastern arm of the river) is not sensitive as a riverine habitat, in its current form.
- The flow of the Liesbeek River should be maintained, if not improved where possible. This means changes and improvements can be made to the Liesbeek River.
- A previous channel of the river (western arm) is disconnected from the Liesbeek River and the northern portion alongside the Transnet land now functions as a backwater wetland filled by storm-water from Observatory.
- However, the northern portion still an important habitat for bird species,

and may provide breeding areas for the Western Leopard Toad, amongst other species

Associated with the rivers are a number of **wetland areas** that comprise remnant floodplain wetland, and artificially created and storm-water dominated wetlands. The ecological condition of these aquatic ecosystems ranges from being moderately to largely modified.

Of the wetland areas within the site, the Raapenberg, Vincent Pallotti and Valkenberg wetlands are considered to be the most important, as remnants of the Black River floodplain wetland area. This wetland complex is considered to be of high sensitivity.

A number of seasonally to perennially inundated ponds, have been created on the golf course (artificial water features)which are possibly breeding sites for the Western Leopard Toads and other amphibians. However, these habitats are described as being of **low quality and easily replaceable.**

The delineated river ecosystems correspond and overlaps with the botanical and faunal sensitivity zones.

4.1.2. Protected areas – terrestrial and aquatic

There are several pockets of land which have been protected by various agreements and/or legislation:

Critical Biodiversity Areas(CBA)- Two small CBA1d ('Irreplaceable Consolidation Sites') have been mapped within the site, These CBAs are covered by a Biodiversity Agreement, protecting these areas in Perpetuity with Biodiversity Agreements between the City of Cape Town and CapeNature.

Ecological Support Areas (ESA)– These habitats are critical to the survival of the CBAs, although these ESA have not been included under the Biodiversity Agreement .

The extent of these protected areas runs along the Liesbeek River and the associated wetlands, and the Black River, including the Raapenberg Bird Sanctuary and associate wetlands. Various habitats in the 'Protected in Perpetuity' areas, which are of importance:

- Marshlands and reed-beds – two harrier species utilize the marshlands and reed-beds for feeding and possible roosting and breeding
- Shallow waters - flamingos, tern and pelican utilize the shallow water for feeding and roosting
- Sandbanks and shores - plover utilizes the sandbanks and shore for feeding and roosting
- Wetlands – used by amphibian species (including the endangered Western Leopard Toad, which uses the wetlands for breeding)
- Grassed areas – used by the endangered Western Leopard Toad
- Vertical banks of the Liesbeek - nests of the Giant Kingfisher
- Steep banks – important nesting area for the Kingfisher, particularly at the confluence of the Liesbeek and the Black Rivers
- Various relatively common bird species are likely to use the site for foraging and breeding, including duck species

4.1.3. Ecological green corridors

The Table Bay District Plan identifies a green linkage from the sea and Zoar Vlei to Rondebosch Common and to the golf courses southeast of the study area , a portion of which traverses this local area. The river corridor therefore can provide a valuable ecological 'stepping stone'. The linkages are severely constrained and tenuous in many areas, and in places are restricted to road verges or canal edges. A particularly bad choke point is the Black River canal immediately north and outside of the study area up to Voortrekker Road, which is completely canalised. Ideally a fringe of natural vegetation at least 10m wide should be created on one, but preferably both sides of the canal in this area.

The development of the local area site should not compromise the ecological connectivity (terrestrial and aquatic. East-west and north-south connectivity

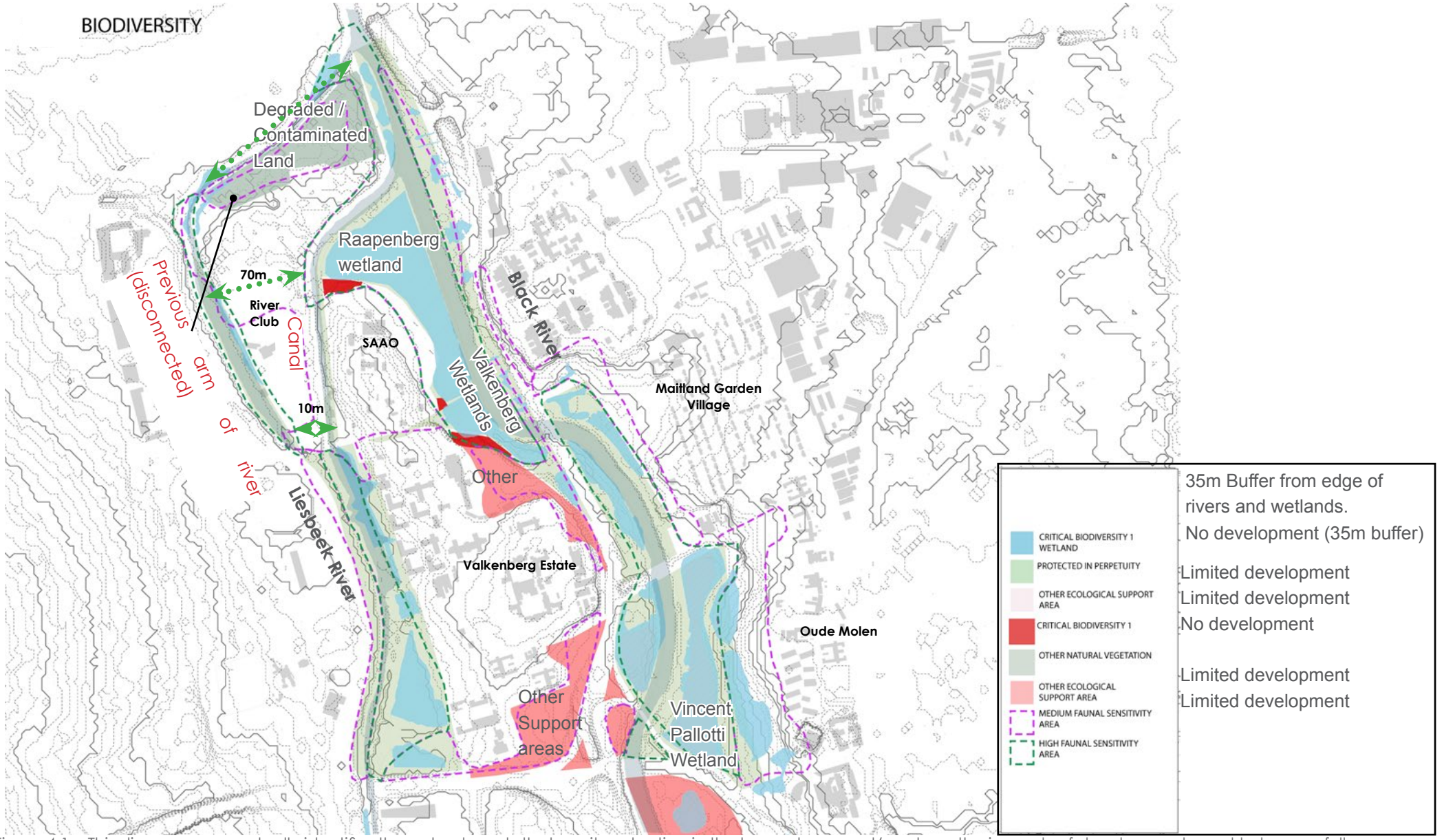


Figure 4.1. This diagram conceptually identifies the natural assets that merit protection in the longer term, and/or where the impacts of development need to be carefully managed.

should not only be maintained, but improved across the site, if/where possible .

One broad (>70m) east-west belt must be maintained in the northern reaches of the River Club property, and an additional minor (>10m) east-west corridor must also be created along the northern and southern site boundaries.

Currently, fences offer a huge barrier to east-west movement across the site As there is limited east – west ecological linkage (connecting the Liesbeek to the Black River) in the southern part of the study area.

No hard infrastructure may be developed in ecological corridors.

4.1.4. Ecological buffer zones

A buffer area of approximately **35m** should be maintained adjacent to the delineated edge of all aquatic features (i.e. all wetlands and the rivers)

Enough natural or semi-natural habitat must be available within at least 2 km radius from all wetlands (Western Leopard Toad breeding habitats), to sustain Western Leopard Toad during the non-breading period (approx. 10 months of the year) If the 35m buffer together with the medium sensitivity zone(ESA), is enforced this will cover this minimum requirement. No hard infrastructure may be developed in the buffer areas.

Contaminated / degraded land

The northern portion of the mashie course (belonging to the River Club) is considered to be contaminated land. This land was previously in-filled with furnace slag, and currently holds limited to no ecological function (Up to 6m deep). Rehabilitation of the degraded land would require the removal of existing topsoil and replacement with suitable new topsoil. Without this expensive intervention rehabilitation in this area is likely to be unsuccessful, and it may then be better to consider some form of development in this area. This portion of land should be used for development / hard infrastructure.

SUMMARY

Areas of no hard development / infrastructure

No hard infrastructure should be developed in the following areas:

- Areas 'Protected in Perpetuity'
- Areas of high High Faunal Sensitivity or High Botanical Sensitivity, Critical Biodiversity Areas

Hard infrastructure may be described as roads, buildings, and similar structures. This is with the exception of limited low impact development in areas, such as raised decks benches, footpaths, etc.

The proposed buffer zones and ecological corridors should also be excluded from any infrastructure development.

Buffer zones: 35m should be maintained adjacent to the delineated edge of all aquatic features (rivers and wetlands)

The historical (western) arm of the Liesbeek River is fed only by storm-water

Ecological corridors

One broad (>70m) east-west belt must be maintained in the northern reaches of the River Club property, and an additional minor (>10m) east-west corridor must also be created along the northern and southern site boundaries. East-west and north-south connectivity should not only be maintained, but improved across the site, if/where possible. With this in mind, the development of the site should not compromise the ecological connectivity (terrestrial and aquatic) Connectivity within these corridors should be maintained or restored where possible. Observatory Road and the canalised section of the lower river have significantly impacted on the connectivity of Liesbeek River. Rehabilitation of the lower Liesbeek River should be undertaken according to an approved rehabilitation plan.

Areas of limited development

Limited development could be considered in the Medium Sensitivity Areas Development must not compromise ecological connectivity through or across that particular patch or strip.

4.2. Socio-economic

The socio-economic analysis provides insight into the population in the study area and the market potential for development given the current market demand in these areas. The section explores the following:

- Demographic profile
- Surrounding land uses and,
- Market demand

The area of analysis is depicted in the following map. This area as shown is made up of suburbs such as Observatory, Salt River, Ndabeni, Maitland Garden Village and Pinelands. The yellow overlay is the TR-LSDF development area.

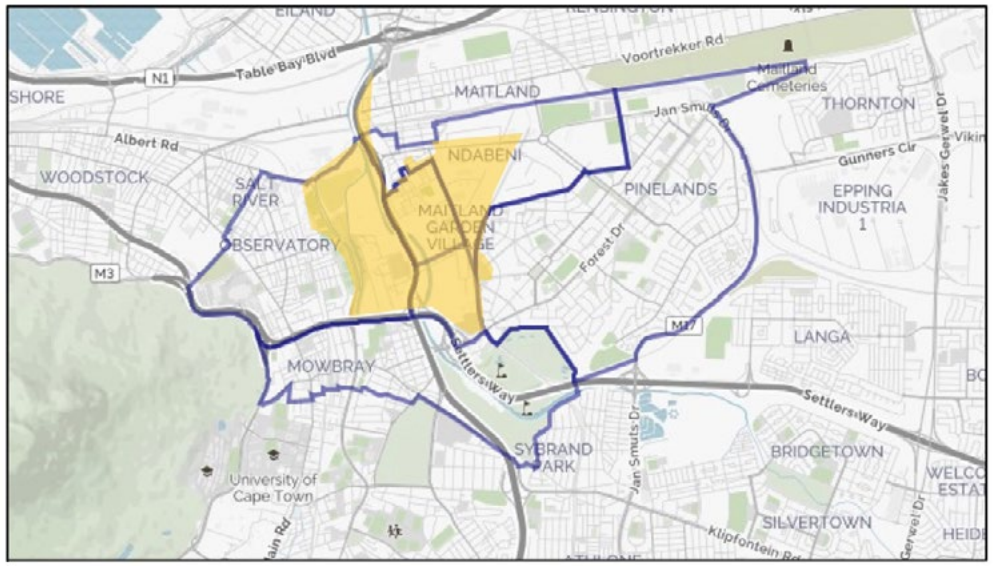


Figure 4.2. Development Site Area

4.2.1. Demographic Profile

Over the past 10 years, the population in Cape Town has increased by 3% per annum. This percentage increase is mirrored in the surrounding suburbs, the population size in 2019 is depicted Table 4.1. These figures are calculated using Quantec Easy Data, which makes use of Census 2011 data.

Table 4.1. Population and Growth Rate per Suburb (Urban-Econ, 2019)

Suburb	2019	Population Growth Rate	Household Growth Rate
City of Cape Town	4 431 559	3%	3%
Maitland Garden Village	2 492	4%	4%
Mowbray	4 993	1%	2%
Ndabeni	1 504	5%	3%
Observatory	13 393	5%	4%
Pinelands	17 934	3%	2%
Salt River	8 102	3%	2%

The analysis shows that approximately 1.1% of the total population in Cape Town live in the suburbs surrounding the TR site. The population growth rates in Maitland Garden Village and Observatory are the most significant in the surround areas. In the case of Observatory, the property market shows a high demand as students and young professionals are drawn to the area with its affordable prices and locational advantages. Observatory has also experienced a significant growth in new residential developments and businesses. Although the current population seems small in these suburbs, the number of people moving to these areas increase year on year, illustrates the growing the demand for property in these locations. This is further emphasised by considering the household growth in each of these suburbs.

The population in these areas are mostly between the ages of 25 to 49. The age demographic is portrayed in Figure 4.3.

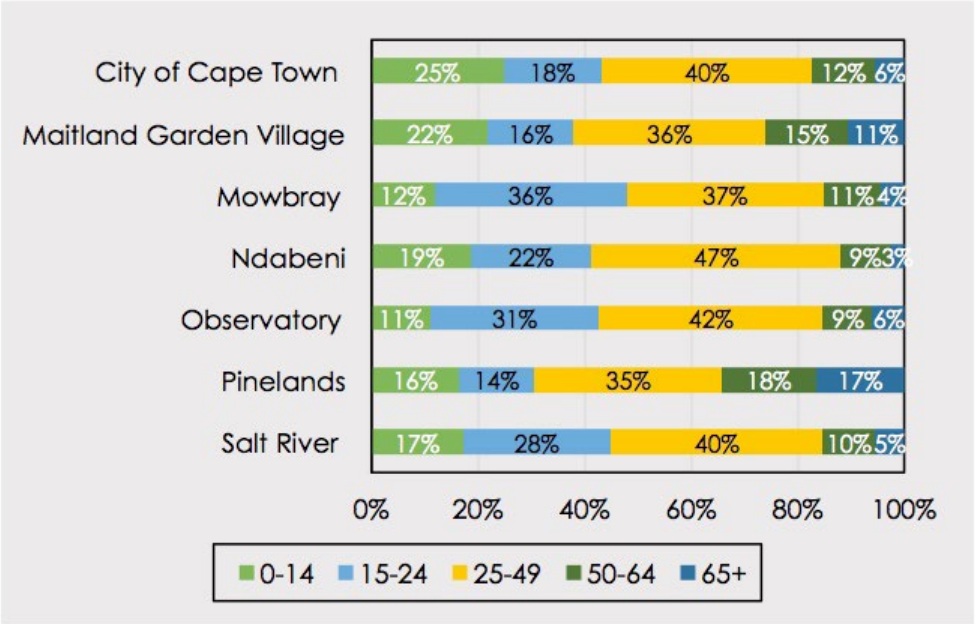


Figure 4.3. Age Demographic in Study Area (Urban Econ 2019)

The majority of the population in the study area is between the ages of 25-49 which indicates a significant working-age population in the area. This is further supported in Mowbray, Ndabeni, Observatory and Salt River with a significant number of 15-24-year olds living in the area. With a strong working-age population, industry and business show potential for growth in these areas with a significant population to support expanding industries. In terms of employment, which concerns those that fall between the working ages of 15 and 64, the following table portrays the level of employment per sector.

Table 4.2. Proportion of Population Employed per Sector (Urban-Econ, 2019)

Sector	Cape Town	Maitland Garden Village	Mowbray	Ndabeni	Observatory	Pinelands	Salt River
Agriculture; hunting; forestry and fishing	3%	2%	2%	1%	1%	1%	2%
Mining and quarrying	0%	0%	0%	0%	0%	0%	0%
Manufacturing	11%	12%	5%	4%	6%	10%	9%
Electricity; gas and water supply	1%	1%	1%	1%	0%	0%	0%
Construction	8%	7%	5%	5%	3%	4%	5%
Wholesale and retail trade	19%	19%	16%	28%	21%	13%	26%
Transport; storage and communication	7%	10%	3%	10%	5%	5%	7%
Financial; insurance; real estate and business services	19%	14%	21%	25%	24%	29%	22%
Community; social and personal services	24%	27%	45%	20%	37%	34%	24%
Private Households	9%	8%	3%	5%	3%	3%	4%

The majority of the working-age population are employed in the wholesale and retail trade, financial insurance, real estate and business services and community, social and personal services.

Wholesale and retail trade is particularly significant in Ndabeni, Observatory and Salk River as these areas are home to many small and medium-size businesses. With the development of the area, there will be an available workforce with the relevant skills to enhance wholesale and retail trade.

In the following subsection, the land uses surrounding the site are explored, which further highlights the level of industry and retail currently in the area.

4.2.2. Surrounding Land Use

The area surrounding the proposed development site is characterised by a number of retail facilities, residential pockets, industrial land and office space. The following map depicts the land uses surrounding the site, which is shown by the yellow oval. In the map, the spaces that are blank represent housing.

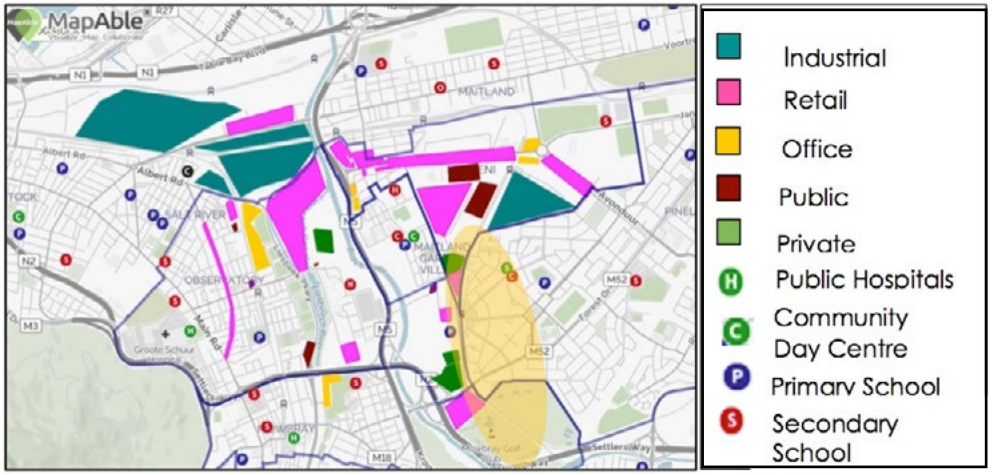


Figure 4.4. Surrounding Land Uses (Urban-Econ 2019)

As the map depicts, there are several retail and industrial spaces surrounding the site. In addition to the demarcated retail areas, there are other informal retail facilities found located between residential pockets. The area also has a supply of office space and hospitals indicating that there is significant use of the land in the area, making it an important node for development in the future.

Given the surrounding land uses, and the type of population in the area, it is recommended that the development consider the abundance of skilled labour living in the area. This labour force is mainly skilled in retail and trade. Furthermore, the proposed development is likely to be used by those between the ages of 25-49, which infers that there must be significant amenities and aspects of the site that attract this group.

4.2.3. Market Demand

The TR-LSDF site is well connected to major nodes in the Cape Town metro area through the M5 which connects to the N1 and N2. The extension of the M16 (Berkley Road) will be a catalyst in unlocking the site for large scale mixed-use development consisting of residential, retail and office space. Given the proximity to Ndabeni and accessibility of the site, opportunities exist for industrial developments, particularly in urban manufacturing and e-commerce (Viruly, 2016).

This section will discuss prevailing market trends in the residential, office, industrial and retail property and the potential uptake and opportunities in the TR-LSDF precinct.

Residential

The strategic location of the TR-LSDF site, particularly its proximity to the CBD and other office and industrial nodes (Rondebosch/ Newlands, Ndabeni, Paarden Eiland, Pinelands and Salt River) make the site attractive for a range of residential property developments, particularly for households in the affordable housing market brackets.

Pinelands (4 226 residential units) is the largest suburb surrounding the site followed by Observatory (3 204 residential units) and Woodstock (3 114 residential units).

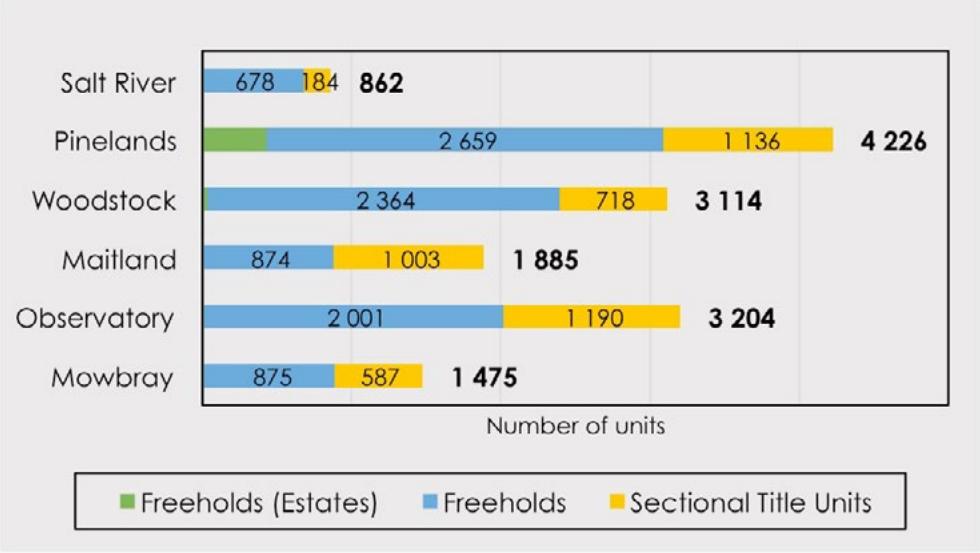


Figure 4.5. Housing Market Stock (Lightstone, 2019)

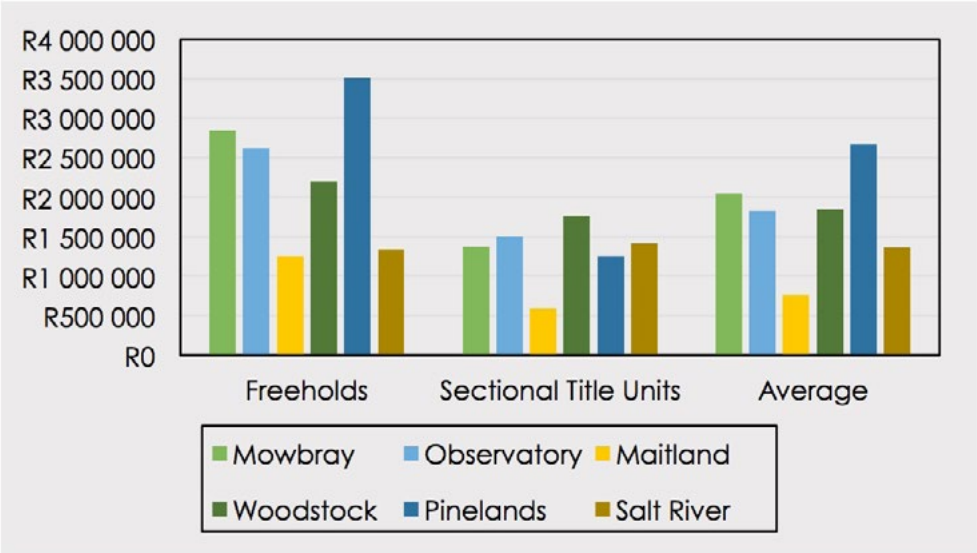


Figure 4.6. Average Property Prices, 2018/19 (Lightstone, 2019)

Most suburbs surrounding the site have seen a continued increase in residential property demand with an associated increase in prices over the last five years. New developments, particularly in Woodstock and Observatory that have made use of the Urban Development Zone (UDZ) mainly cater to up-market buyers.

Maitland remains the most affordable suburb surrounding the site, with the average house price of R768 000. However, prices for freehold property in this suburb have increased at an average annual rate of 12.1% since 2014. Homes in this suburb are mainly large family homes with four bedrooms and two bathrooms while flats are two-bedroom, one-bathroom units. The close proximity to major routes in this suburb appeal to investors who renovate older homes as well as first-time home buyers, due to the affordability and accessibility. Approximately 39% of recent buyers in Maitland are between the ages of 36 and 49 while 38% are between the ages of 18 and 35.

Residential units in Observatory and Woodstock sell for approximately R1.8 million. The prices of freehold property in Observatory and Woodstock have increased on average by 14.6% per annum and 21.7% per annum respectively since 2014 – emphasising the increased demand for property in these suburbs. These suburbs are popular for student accommodation due to the proximity to the University of Cape Town, as well as young professionals and investors buying for the rental market. Homes in Observatory and Woodstock are typically 3-bedroom, 2-bathroom, 110m^2 units while flats are typically between 60m^2 and 70m^2, 2-bedroom units. Bachelor units are approximately 40m^2. The majority of recent buyers in Observatory (42%) are between the ages of 18 and 35 while the majority of recent buyers in Woodstock (43%) are between 36 and 49 years old. Property in Salt River is more affordable compared to Woodstock and Observatory, which attracts younger buyers. Most new buyers (60%) are younger than 35.

Residential property in Mowbray is more expensive compared to Woodstock and Observatory, with an average price of R2.0 million. Freehold property prices have increased by approximately 14.1% per annum since 2014. Homes are slightly larger in Mowbray compared to Woodstock and Observatory, but typically also consist of 3-bedroom, 2-bathroom units. Mowbray is, however, attracting younger buyers, with the majority of recent buyers (40%) being between 18 and 35 years old.

Pinelands is typically marketed towards families, with large 4-bedroom, 3-bedroom homes. The most recent buyers in Pinelands (51%) are between 36 and 49 years old. On average, freehold property in Pinelands sells for R3.5 million while sectional title units sell for R1.3 million. Property prices in Pinelands have increased at similar trends as broader Cape Town property prices, at an average rate of 10.3% per annum since 2014.

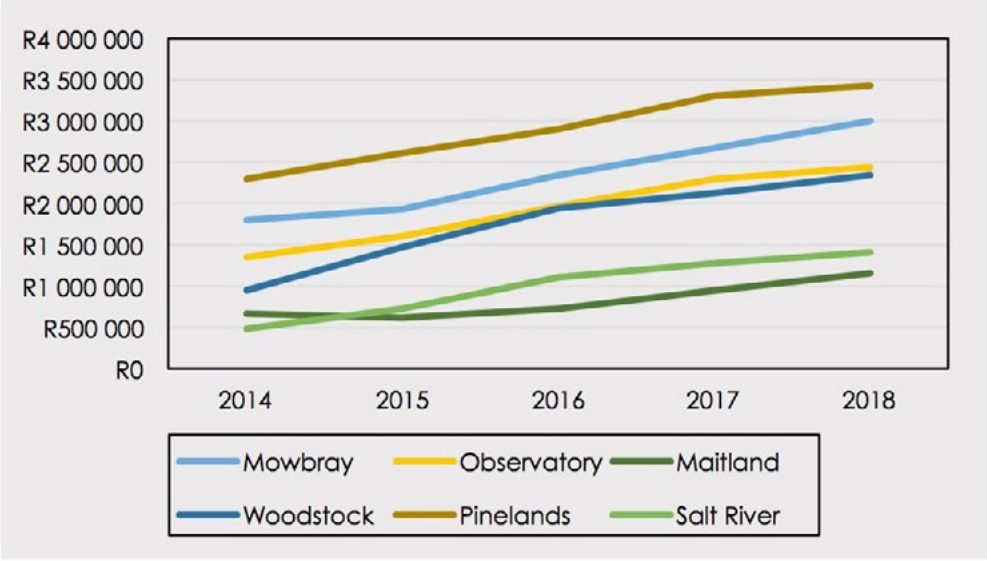


Figure 4.7. Median Property Prices – Freehold Property (Lightstone, 2019)

The property market in the suburbs surrounding the TR-LSDF site has seen immense growth in terms of prices with relatively stable sales over the last five years. The high population growth and large proportion of younger people residing in the area has created a significant need for more affordable priced units in the area, given its proximity to commercial nodes and access to main transport routes.

The demand for residential units at the TR-LSDF site includes a mix between social, affordable, student and market units in order to meet the growing demand in the Cape Metro area to live closer to places of employment. Based on property market trends on a national and local level, the market demand segmentation estimations for the TR-LSDF site are presented in the table below.

Table 4.3. TR-LSDF Housing Demand (Viruly, 2016)

Type	Percentage	Floor area (%)	Size of units (m²)	Number of units
Social	20%	322 760	40	4 841
Affordable	24%	387 312	58	4 007
Student	6%	96 828	20	2 905
Market	50%	806 900	80	6 052
Total	**100%**	**1 613 800**	**-**	**17 805**

It is estimated for the residential property take-up at the site to be 17 805 units, of which half are market-orientated units (valued at more than R700 000.00). Given the current developments in the area, current market trends of above-average prices and continued price growth in the suburbs surrounding the TR-LSDF site, demand for residential property is likely to grow, particularly in the market segments outlined in Table 4.3

Office

The two main office nodes that are within a 5-kilometre radius of the TR-LSDF site are the Pinelands and Rondebosch/ Newlands nodes. Even though Salt River,

Observatory and Woodstock are not traditional office nodes with large office parks or high-rise office buildings like in the Cape Town CBD, redevelopments and conversions from industrial space have also increased the availability of office space in these areas. Mowbray and Maitland also have some office space that is part of mixed-use developments.

Despite increasing somewhat compared to 2018, the office vacancy rates are relatively low in the office nodes surrounding the TR-LSDF site compared to the Cape Town CBD.

Area	March 2018	March 2019
Cape Town CBD	10.4%	11.1%
Pinelands	2.0%	2.5%
Rondebosch/ Newlands	1.2%	1.4%

Table 4.4. Office Space Vacancy Rates (Rode, 2019)

Affordability, proximity to the CBD and ease of access are the main demand drivers of office space in areas surround the TR-LSDF site. Rental rates for A grade offices are typically more affordable compared to the CBD.

	Grade		
Area	A	B	C
Cape Town CBD	R150	R115	R98
Salt River	R141	R118	R85
Woodstock	R140	R117	R88
Observatory	R135	R102	R78
Mowbray	R143	R113	R92
Rondebosch	R115	R125	R95
Newlands	R185	R138	R122
Pinelands	R125	R112	R98
Maitland	R135	R115	R100

Table 4.5. Office Space Vacancy Rates (Rode, 2019)

The regeneration of the Woodstock, Observatory and Salt River areas have increased the popularity for office space due to the vibrancy of these neighbourhoods. Woodstock, in particular, has become popular for large open-plan offices suitable for the creative and design industries.

The demand for office space is evident through relatively high rental escalation rates and relatively low vacancy rates in the areas surrounding the TR-LSDF site.

Area	Average rent-free periods (months)	Office rental escalation rates
Cape Town CBD	1.5	7.9%
Salt River	1.3	8.4%
Woodstock	1.8	8.4%
Observatory	1.5	8.2%
Mowbray	1.0	8.0%
Rondebosch	1.0	8.0%
Newlands	1.2	7.8%
Pinelands	1.0	7.7%
Maitland	1.0	8.5%

Table 4.6. Rent-free Periods and Escalation Rates (Rode, 2019)

It is expected that market demand in the areas surrounding the TR-LSDF site will continue to grow, with an estimated increase in demand of 28 242 m^2 per annum (Viruly, 2016). It is expected that the TR-LSDF site can capture 10% of the demand for office space in the broader area. The TR-LSDF site is therefore expected to capture 2 800 m^2 per annum of the office demand in the broader area. Recent redevelopments of industrial units into office spaces and strong growth in the residential property market will likely boost the demand for additional office space in the area.

Industrial

Ndabeni is an existing industrial node located within the TR-LSDF precinct. Other industrial nodes that are within a 5-kilometre radius are Woodstock, Salt River, Observatory, Paarden Eiland and Maitland.

The Ndabeni industrial area is characterised by large warehouses used for manufacturing and logistics, with an average size of 1 750m^2 as well as mini-units utilised for light industrial activities. The ease of access to public transport (rail and road) in Ndabeni makes the area popular for labour-intensive activities, while visibility and centrality of the area have contributed to mixed-use light industrial activities with retail sales. This has increased the demand for smaller units, particularly along the N1 (Broll, 2017).

Area	Average size		Price range (R/m^2)
	Light industrial	Warehouse	
Paarden Eiland	252m^2	1 346m^2	R57 – R66
Woodstock/ Salt River/ Observatory			R60 – R80
Maitland			R47 – R58
Ndabeni			R51 – R63
Cape Peninsula average			**R47 – R57**

Table 4.7. Average Industrial Space Sizes and Prices (Uban-Econ/Rode, 2019)

Paarden Eiland is one of the oldest industrial areas in Cape Town and has recently seen a shift in the product offering of the node as old warehouses are being refurbished to create mixed-use spaces. The close proximity to the CBD and ease of access via private and public transport has contributed to the popularity of the area despite above-average rental rates.

Industrial spaces in Woodstock and Salt River have declined in recent years as more redevelopments and upgrades have occurred in the area. However, demand for industrial space remains positive. Due to the recent upgrades of the area, industrial spaces are more geared towards light industrial activities, logistics and distribution, showrooms and design companies (Broll, 2018).

The vacancy rates in the industrial areas surrounding the TR-LSDF site are considered low emphasising the high demand for industrial space in the area. Given the high demand for industrial space in the areas surrounding the TR-LSDF site, it is envisioned that there is potential for industrial development on the site, particularly spaces suitable for light industrial, urban manufacturing or mixed-use retail/industrial spaces. This includes precincts suitable for projects such as the Cape Health Technology Park. It is expected that the take-up of such industrial spaces will not exceed 10 000 m^2 gross lettable area (Viruly, 2016).

Current trends indicate that industrial property is still in high demand in the area, with demand boosted by good access to major routes, public transport and declining stock in the Woodstock and Salt River areas.

Retail

Within a 5 kilometre radius of the TR-LSDF site, there are a number of small retail centres with sizes between 5 000m^2 and 12 000m^2 including Old Biscuit Mill, St Peters Square, Shoprite Centre (Mowbray), Phillip Centre, Ottery Value Centre and Northgate Estate. Larger centres with sizes ranges ranging between 12 000 m^2 and 25 000m^2 include The Palms Décor and Lifestyle Centre, Woodstock Exchange and the Howard Centre. Woodstock, Salt River, Maitland and Salt River are also characterised by a large number of street-facing retail shops.

Within a 10 kilometre radius of the TR-LSDF site, larger malls include Cavendish Square, Canal Walk and the V&A Waterfront that serve as regional shopping centres.

The existing retail space available in the market is sufficient to meet the needs of the local population, however, with the envisioned development of the

TR-LSDF site, particularly the residential components, demand for additional shopping space will be created. The potential for retail space will range between 10 000m^2 and 20 000m^2, which will be a neighbourhood shopping centre for those residing in the precinct (Viruly, 2016). It should be emphasised that this demand is a derived demand stemming from the residential developments and that the phasing of the development should be taken into consideration when planning for retail developments. .

CONCLUSIONS

The TR-LSDF site is well located within a central part of the Cape Metro area and has the potential to be well serviced by road, rail and bus services with improved pedestrian access if strategic plans such as:

- The extension of Berkley and Station roads;
- Promoting NMT along key routes such as Alexandra Road and along the river corridor;
- Reinforcing TOD around the Pinelands, Ndabeni and Maitland stations are implemented.

This improved access will be catalytic in unlocking the potential for the site to be developed into a high-density residential and commercial node in central Cape Town.

Due to the high demand for affordable housing in the area and the site's favourable location in terms of higher education institutions and commercial nodes, the TRUP site can meet the demand for housing if a variety of subsidised, affordable, student and market housing is provided. Given the demand for commercial property (office and industrial) in the surrounding areas, the TRUP site can take-up some of the demand especially considering the existing institutions on the site and interest in the site for a new SKA campus and projects such as the Cape Health Technology Park, industrial space allocations on the site can be geared towards servicing the health, science and technology markets.

Considering the provisions for community and recreation facilities as well as public spaces, the long-term development of the site can create a live-work-play neighbourhood within central Cape Town.

4.3. Built environment and Infrastructure

4.3.1. Broad Urban Structure

The study area is characterised by strong north- south linkages and very weak east- west linkages as a result of the river corridors and limited vehicular and pedestrian crossings. The nature of the land uses (large, fenced - off institutions) have resulted in extensive, isolated patches that do not interact positively with neighbouring land uses/areas. These are inward looking land uses, creating a mosaic of different land uses rather than one homogeneous suburb.

4.3.2. Built Form, Coverage and Densities

The figure ground illustrates the built form and density currently found in the study area.

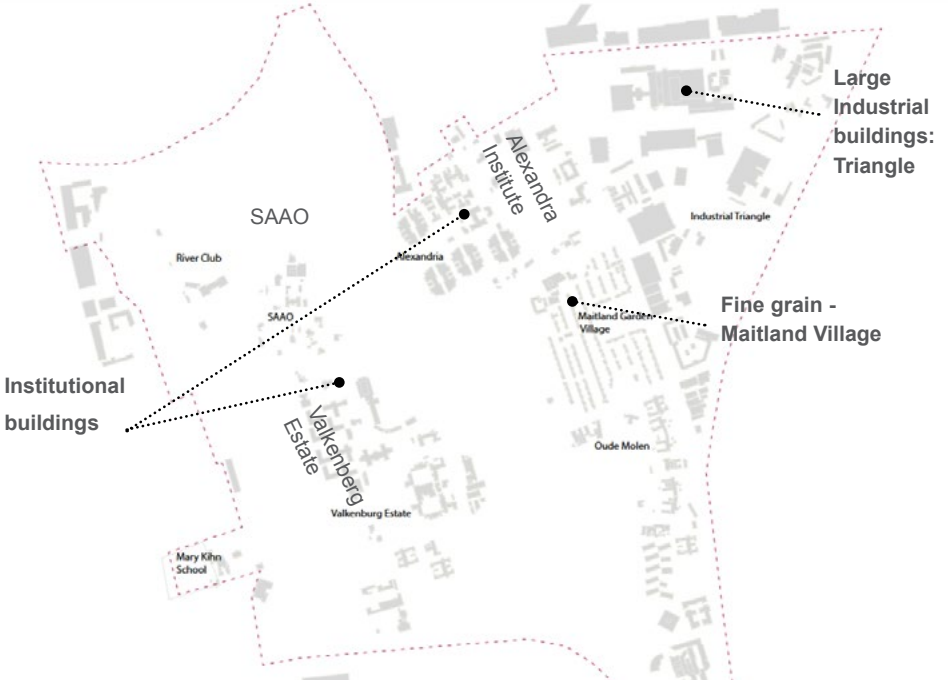


Figure 4.8. Figure ground indicating densities and form in the study area.

Ndabeni illustrates a much grosser scale of buildings, typical of an industrial area, although there are large areas of vacant space between buildings.

Most of the remainder of the study area indicates clusters of large institutional buildings with large open spaces between institutions.

Only Maitland Garden Village has a finer grain, being a residential development within a linear grid pattern.

The built form varies dramatically across the site from large scale office buildings of between three and eight storeys to old institutional buildings of two to three storeys, to small scale residential buildings and industrial warehouse developments.

The floor factors (floor area in relation to site area) of the respective precincts are very low. On average, floor factors of the developed precincts are 0.7, with the most intensely developed areas (the office parks adjacent to Vincent Pallotti Hospital) having a floor factor of approximately 1.3. The floor factors of the Oude Molen, Valkenberg Hospital and Alexandra Hospital areas are extremely low, and range from 0.14 to 0.2. There is approximately only 471 000m² of floor area within the Study area site, and coverage is extremely low. Resultant densities are also low. For instance, Maitland Garden Village has a gross density of 18du/ha, notwithstanding the fact that the typical typology is small semi-detached units.

4.3.3. Land Use

Land uses within the Study area site are diverse and vary from industrial uses to residential village and institutional. . The different land use activities typically operate discreetly from one another behind boundary walls and security fences, or form distinct areas separated by roads or by the river corridors. The only residential development (Maitland Garden village)is set back on a hill

overlooking the Black River. The industrial and utility uses located in Ndabeni Triangle are set far back from the river corridor, behind other residential and institutional land uses. The land use types within the Study area site include:

a) Higher-order institutions, including the SAAO, Alexandra Hospital and Valkenberg Psychiatric Hospital. These institutions located on the hillocks dominate the landscape. The sensitive nature of these institutions prohibits real integration with the surrounding suburbs and river corridors; Fences surround the institutions with limited access.

b) Commercial destinations, including the River Club conference centre and golfing hub, the Protea Hotel, Wild Fig Restaurant and Millstone Farm-stall and Café(Oude Molen), located on the edges of the river corridors. While these destinations attract visitors to the area, they do not maximise on the value that the river landscape could provide;

c) A number of schools, including the Molenbeek School for special needs on the Alexandra Hospital site, the Mary Kihn School for Partially Hearing Children in Observatory, the Montessori and Waldorf Schools in the Oude Molen Precinct, and the Maitland Garden Village Primary School;

d) Residential development, which is largely confined to Maitland Garden Village, although there are individuals living in Oude Molen and resident patients in the two hospitals. The residential development does not engage with the rivers, which is unfortunate given the potential for it to provide eyes over the river corridors;

e) Industrial type activity, which is concentrated east of Alexandra Road. Ndabeni Triangle is dominated by COCT depots, with other commercial and light industrial activities clustered along Alexandra Road;

f) Office development, which is generally located on the periphery of the site in three distinct locations (adjacent to Vincent Pallotti Hospital, along Fir Street, and east of the M5 Highway). With the exception of the Black River Office Park on Fir Street, there is limited positive interface of these office buildings with the Study area, and no activation of the ground level domain by any of these developments; and

g) Higher-order sport and recreational facilities, including a municipal swimming pool and Hartleyvale Stadium. In addition, the River Club driving range and mashie course and the Peninsula Golf Driving Range offer formal recreational opportunities, as do the eight formalized sports fields within the Study area site. Furthermore, the river corridors offer some (albeit limited) opportunities for informal / passive recreation, including birding, picnicking, dog walking, running and horse riding. Figure 3.12 identifies the various types of green space within the site.

4.3.4. Institutional Informants (zoning /ownership)

Zoning

Twelve zoning types are found within the Study Area, including Community 1: Local; Community 2: Regional; General Business 1; General Industrial 2; Single Residential 1: Conventional Housing; General Residential 4; Mixed Use 2; Open Space 2: Public Open Space; Open Space 3: Special Open Space; Transport 1: Transport Use; Transport 2: Public Road and Public Parking; and Utility (Figure 4.25. Zoning on page 67). From the figure, it is clear that Community and Open Space zonings dominate the Study Area, with land parcels with Open Space zonings largely being located along the river corridor. Clear exceptions include the Ndabeni Triangle, which is largely zoned for Industrial and Utility purposes; Maitland Garden Village, which is largely zoned for Single Residential purposes; and Oude Molen, which is zoned for Utility purposes.

In comparing the above-mentioned zoning types with actual land use within the Study area, a few inconsistencies emerge, which are not categorised as legal conforming use rights. In some instances, there are discrepancies between what happens on the ground, and what is legally allowed. For the small number of properties where there are discrepancies between land use and zoning, rezoning of properties may be required to permit current and/or proposed land uses. It may also be necessary to establish whether there are approved consent use applications for those land parcels which have zoning / land use discrepancies.

Restrictive Conditions of Title

The key findings in this section of the chapter draw on the work undertaken

Figure 4.9. Transnet site north of study area

Figure 4.10. Transnet site north of the study area

Figure 4.11. Black River Park

Figure 4.12. View of the storm-water/old Liesbeek river course in winter

Figure 4.13. View of Malta Park towards Observatory

Figure 4.14. View of the River Club

Figure 4.15. View of Valkenberg through the fence (public view).

Figure 4.16. Current street view of the SAAO

Figure 4.17. Current view of the canal between River club and SAAO

Figure 4.18. Protea Hotel

Figure 4.19. Old admin building and Nieuwe Molen at Alexandra Hospital.

Figure 4.20. Cape Health and Technology Park (Biovac) headquarters

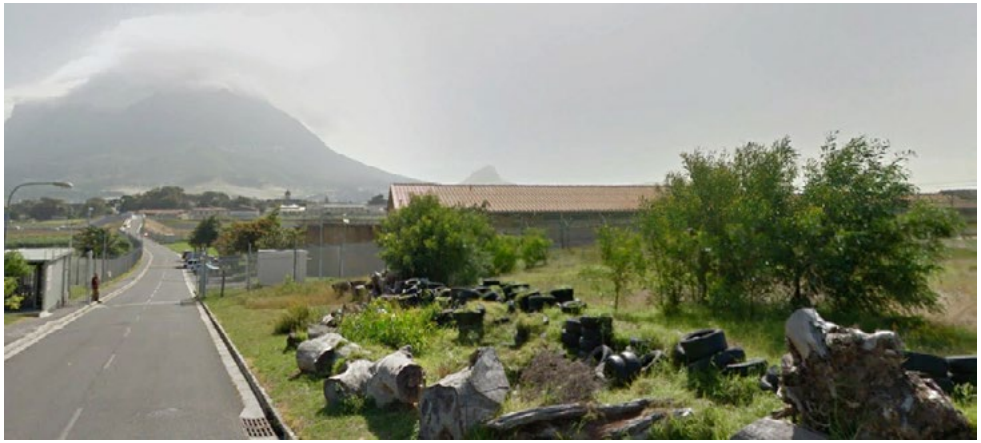


Figure 4.22. Valkenberg forensic unit and only vehicular bridge across Black River

Figure 4.21. City of Cape Town utilities building in Ndabeni Triangle

Figure 4.23. Oude Molen F- Wards.

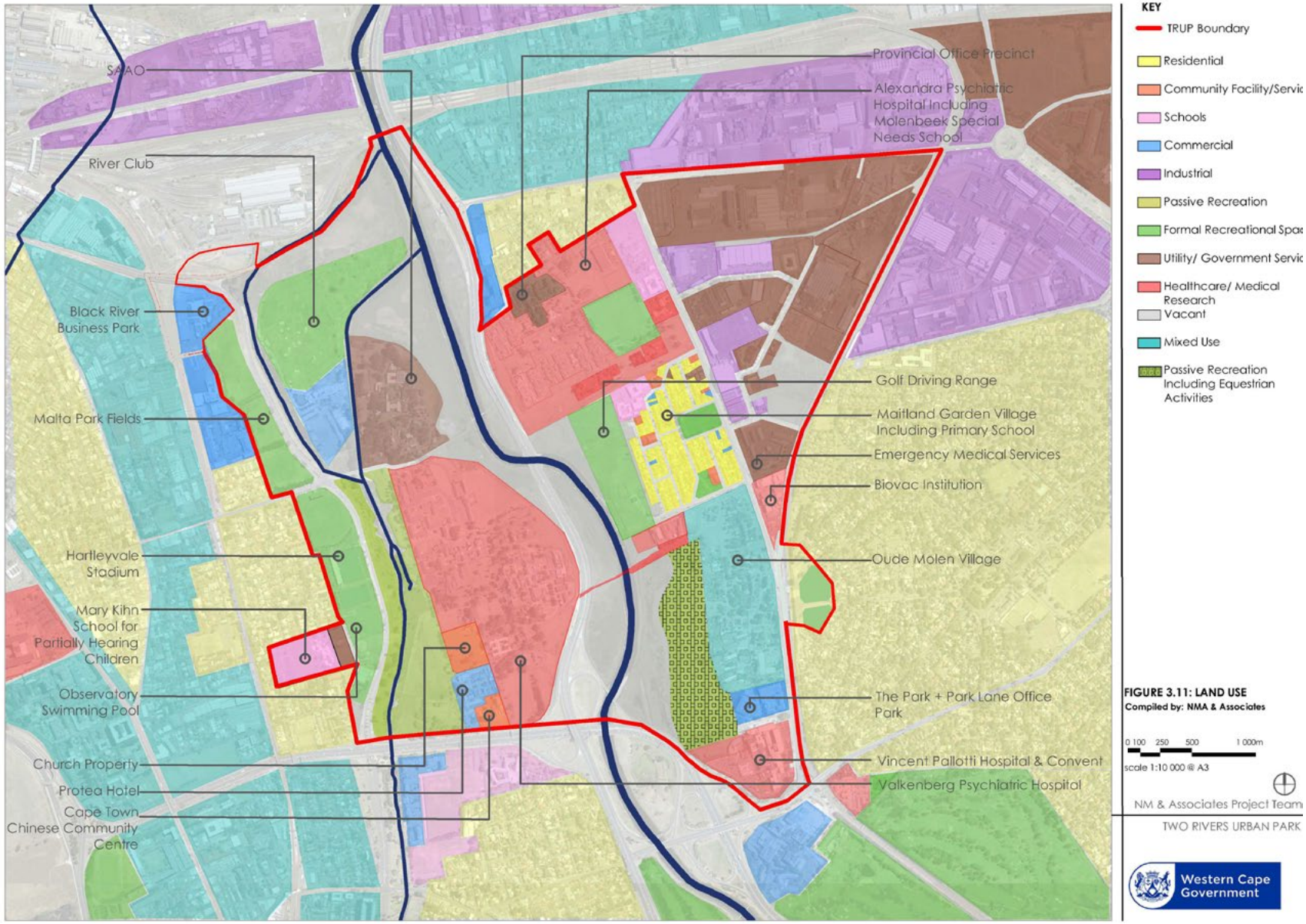


Figure 4.24. Land use

by C&A Friedlander Attorneys, which formed the basis of the Study area Conveyancer's Report, which was compiled by NM & Associates in October 2016. The Conveyancer reviewed the current and historical Title Deeds of 91 properties, namely all the land parcels located within the study area, with the exception of those which comprise Maitland Garden Village. The purpose of the investigations was, amongst others, to determine whether there are any restrictive conditions of title on the properties within the Study area site, and if so, whether they would need to be removed in order to permit development, subdivision and/or rezoning.

The outcome of the investigations was that a large number (61) of the 91 properties examined have restrictive title conditions. The restrictions can be classified into four broad categories, namely 'use of land'; 'subdivision'; 'servitude'; and 'other'. As shown in Figure 4.26. Restrictive Title deed conditions (information from baseline reports , 2017) on page 69), the properties with restrictive conditions of title are spread across the Study area site, and many properties have multiple restrictions. Therefore development on these parcels will be required to go through a process to have them removed or altered.

Table 4.8. TR-LSDF Ownership Table Summary

Owner	Percentage of total
City of Cape Town	53%
Western Cape Government	25%
Private entities	14%
Parastatals	8%

In terms of area, the COCT is the single largest land owner, holding 53% of land located within the Study area. Western Cape Government is the second largest land owner by area, with 25%. Private entities and parastatals own 14% and 8% of land within the Study area, respectively. Figure 4.27. Ownership of property in Two Rivers LSDF (Information from baseline reports , 2017) shows the ownership of each erf within the study area.

City of Cape Town (53%)

CoCT's land holdings within the Study area can be classified into four broad categories. The first category includes the Malta Park and Hartleyvale recreational areas, which are largely located within the 100-year flood-line. The second category includes those parcels of land which are directly related to the Black and Liesbeek rivers, hence also located within the floodplain. The third category includes the discreet and fragmented parcels of land located within the Maitland Garden Village precinct, which are not significant enough to contribute to meaningful development and growth within the broader Study Area The fourth category includes the large and underutilised utility-related sites within the Ndabeni Triangle precinct, which show great potential for future development. The following departments currently occupy Ndabeni Triangle .

Table 4.9. Table indicating COCT Departments in Ndabeni

Department functions	Staff/special needs
Biodiversity Management Branch; Environmental Management Department. Functions include: management of the City's protected areas; invasive species control; protected area expansion; conservation services; job creation and skills development; environmental education. Biodiversity Management has many offices (16 spread across the City) and 2 head offices – one of which is located at the old abattoir. Functions located here include admin; professional staff; workshop team and works yard; stores (uniform, vehicles, consumables etc.); veterinary facilities.	16 professional staff and admin (on 2nd floor main building) plus workshop (6 staff) Works yard and storage space; as well as a veterinary room for surgical procedures
Law Enforcement and Security Services Law Enforcement operates their uniform stores from one of the buildings in the yard	3 staff members (excluding the shelving space requirements The building occupied has a number of construction issues including asbestos roofing and leaking.

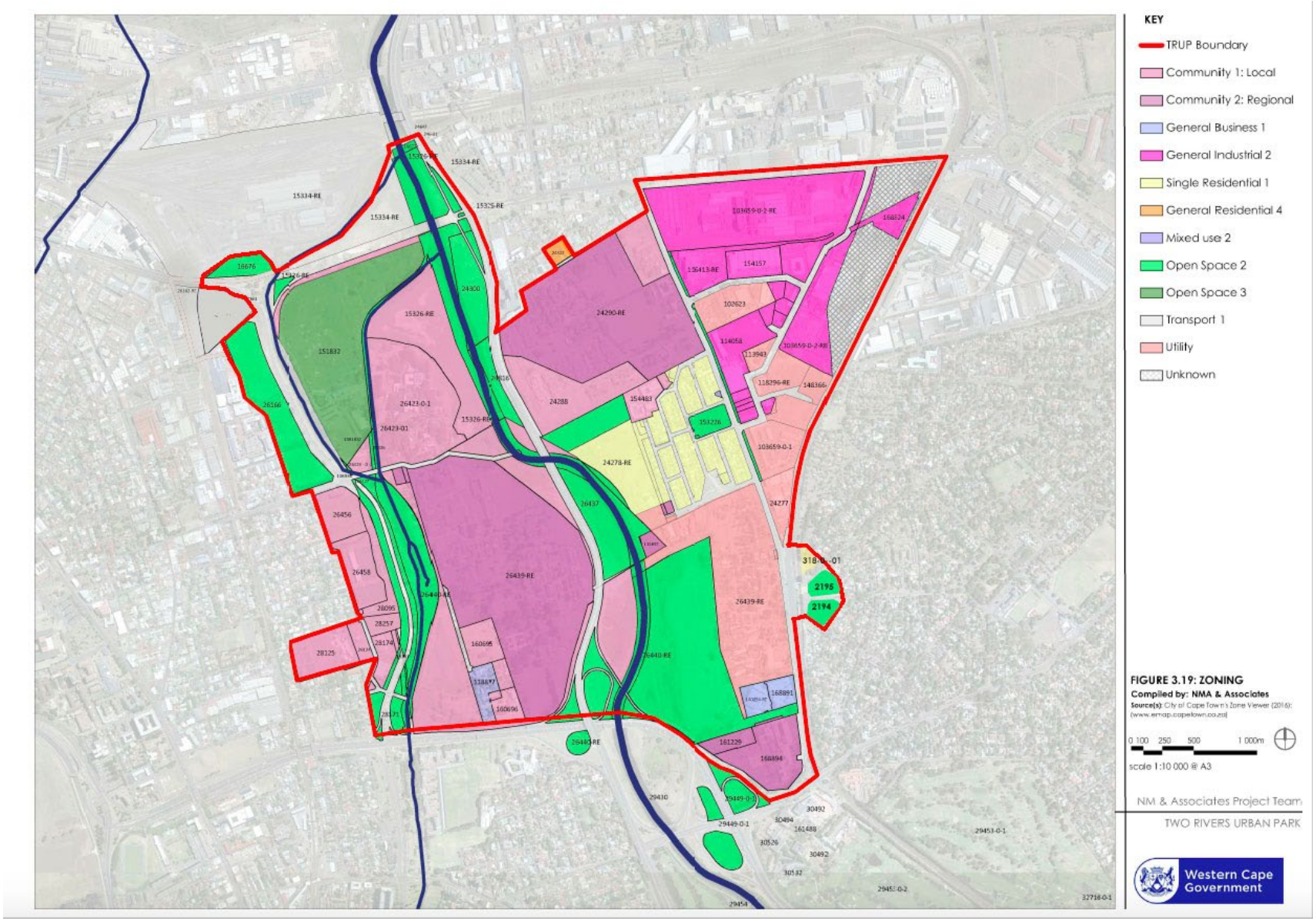


Figure 4.25. Zoning

Department functions	Staff/special needs
Facilities Management ensuring that all services issues are rendered on time & maintenance issues are attended to at Ndabeni Admin, Operations & Workshop Building.	- Ndabeni Admin (1640 m^2) and (70 ppl) - Ndabeni Operations (990 m^2) and (65 ppl)- Ndabeni Workshop (3451 m^2) and (48 ppl)
Traffic Services	Two vehicle impoundment facilities in the triangle area which has been gazetted to operate as impound facilities. The extend is 20625 square metres for Ndabeni pound and 22098 square metres for Maitland pound with a total extend of 42823square metres. 3 staff members at Maitland pound and 14 staff members at Ndabeni pound totalling 17 staff members. In the process of expanding.
Electricity services	Test & Metering Building
Municipal Roads	
Library Services (Ndabeni Library)	

Western Cape Government (25%)

The provincial landholdings within the Study area comprise nine properties, including the two erven on which the Mary Kihn School and Garden Village Primary School are located. Five properties form the Alexandra Hospital precinct, while the two remaining erven are those on which the Valkenberg Psychiatric Hospital and the Oude Molen Eco-Village are located. Given that the nine provincially-owned erven are largely occupied by institutional uses (the Oude Molen Eco-Village being the exception), the urban redevelopment potential of these properties in the short to middle term is limited.

Private (14%)

The privately-owned land parcels within the Study area site are highly fragmented, and can be classified in five categories. The first includes the River Club, a private conference centre and golfing hub. The second category includes three erven to the south-west of the Valkenberg Psychiatric Hospital, two of which are owned by community organisations (The Western Province Chinese Association and The Church of Jesus Christ of Latter Day Saints), and the other by the University of Cape Town, which is leased to a private entity, the Protea Hotel Group. The community-owned sites may change ownership in the future, and while the UCT owned land parcel may be sold, the land use of the site will likely remain the same. As such, these sites are only likely to contribute to the development of the study area site if the private sector incentives justify this redevelopment. The third category includes the land occupied by Park Lane and The Park office blocks, as well as by Life Vincent Pallotti Hospital. While it is possible that these properties may change hands, it is unlikely that the land uses will change, as the properties are well-located near the intersection of the N2 and M5 highways, and arguably already meet their highest and best use potential. Life Vincent Pallotti Hospital has grown substantially in footprint in recent years.

The fourth category includes the discreet and fragmented parcels of land located within the Maitland Garden Village precinct, which like their CoCT-owned counterparts, are not significant enough to contribute to meaningful growth within the broader Study Area It should be noted that the privately-owned properties in the Maitland Garden Village precinct, are the only sites in the Study Area which are owned by individuals and families, and not by companies, parastatals or organs of state.

The fifth category includes the large light industrial and warehousing properties in the Ndabeni Triangle precinct. These properties mainly flank Alexandra Road, and create a lengthy dead interface along the road. These properties show much potential for future (re)development that can begin to activate the Alexandra Road edge.

Parastatals (8%)

The land parcels owned by parastatals are small in number, and are largely located on the western half of the Study area. Firstly, to the south-west of the Valkenberg Psychiatric Hospital, SAHRA owns a land parcel, which is leased

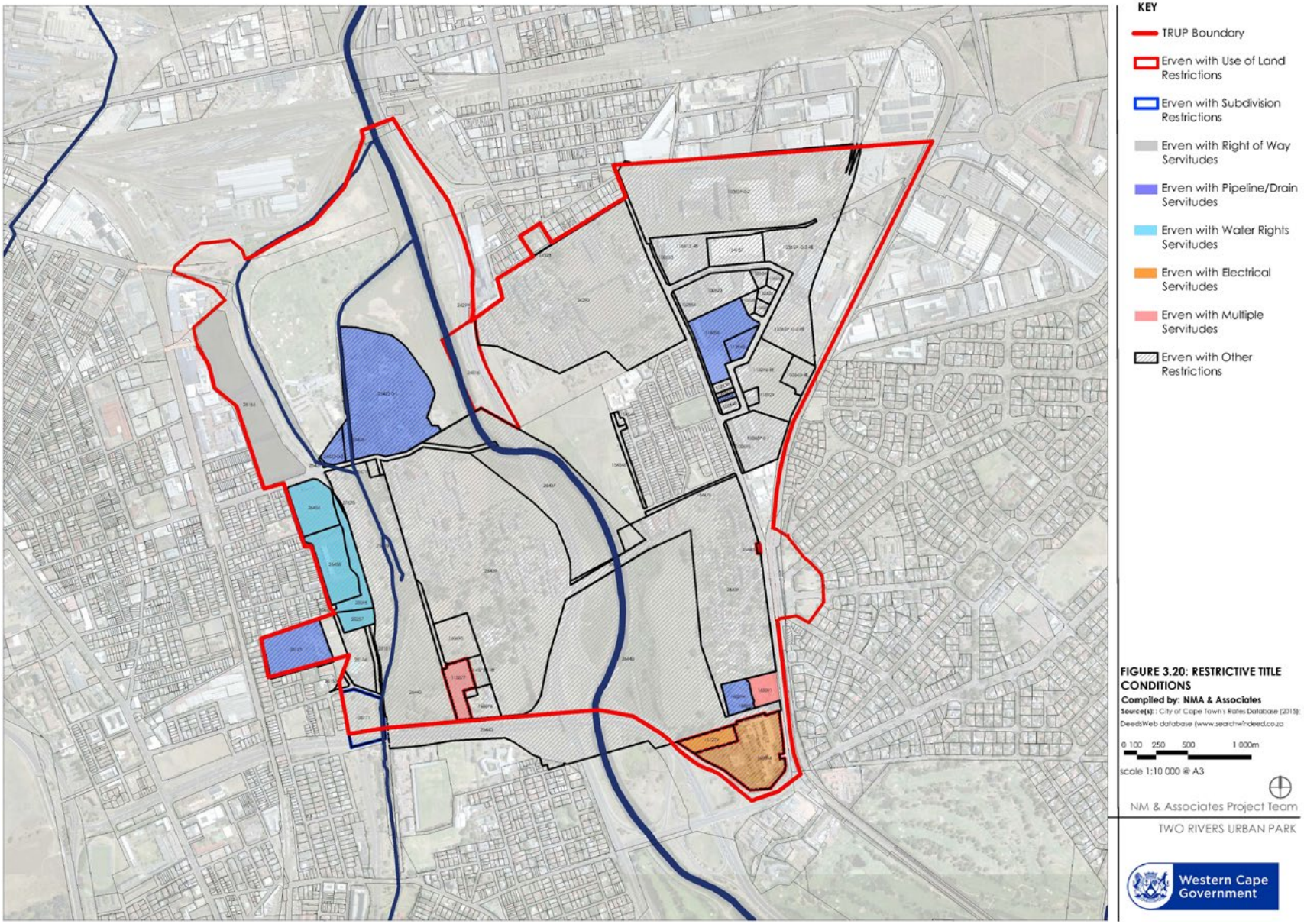


Figure 4.26. Restrictive Title deed conditions (information from baseline reports , 2017)

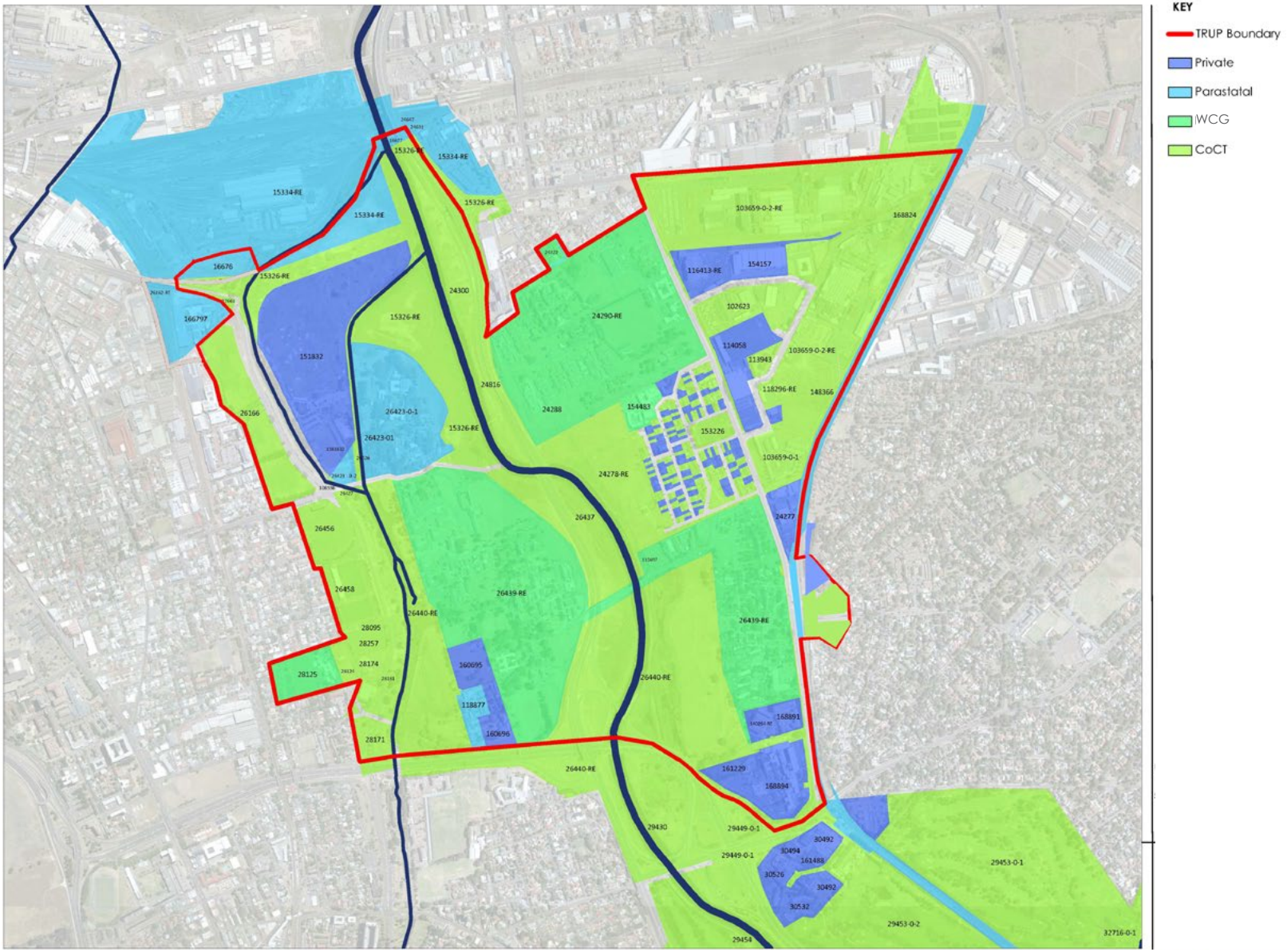


Figure 4.27. Ownership of property in Two Rivers LSDF (Information from baseline reports , 2017)

to the Protea Hotel Group. Given the heritage significance of this property, it is unlikely that the nature of this site will change. Secondly, the site on which the SAAO is located, is owned by the National Research Foundation (NRF). For similar heritage-related reasons, the nature of this site is also unlikely to change. Thirdly, the land which lies at the entrance to the River Club is also owned by the NRF. Located within the floodplain, its development potential will need to be carefully considered. The South African Rail Commuter Corporation owns four land parcels in the north-western corner of the Study area site, on which railway lines and bridges are located. Portions of these sites could be redeveloped.

Strategic vacant sites for residential purposes

Several vacant or underutilised sites exist within the study area, which could be developed either for public or private housing purposes, or portions therefore. Sites identified for public (owned by CoCT or WCG) infill development include *inter alia*:

- Portions of 2194, 2195, a portion of 318-RE and a portion of 318-0-01, Pinelands
- A portion of 24290-RE (Alexandra Institute) along Alexandra Road
- A portion of 24278-RE,west of- and alongside Maitland Garden Village
- A portion of 26439-RE , Oude Molen Site, Forensic wing
- Observatory Bowling Club site (Erf 28124).
- Portions of Erven 24187,Maitland & Erf168824, Ndabeni (around Ndabeni Station).

Current public levels of access to the river corridors

In its current form, the Liesbeek River where it runs through the study area, can only be accessed formally off Liesbeek Parkway and off Liesbeek Lane in front of the valkenberg Estate. The remainder is under private ownership.

The Black River can only be accessed informally off the M5 highway. The remainder of the river can only be accessed through walled off precincts such as Oude Molen.

4.4. Transport and movement

4.4.1. Existing Network Summary

National Road N2: 6 lane Freeway to the south.
M5: 4-lane freeway to the east.
Liesbeek Parkway on the western side going through the study area; partially dual carriageway and single carriageway.
Berkley Road: Class 2 arterial presently a single carriageway to the east of the M5.
Malta Road: Class 3 road with limited upgrade potential due to road reserve limitations.
Alexandra Road: Class 3 road with a single carriageway at present within a restricted road reserve (18m), limited opportunity for widening.
Station Road : Class 3 linking Liesbeek Parkway with Main Road through Observatory, with its eastward extension the only existing road link into the Study area site.

4.4.2. External vehicular circulation

Although the Study area precinct is centrally located geographically within the Metropolitan area and is strategically close to the Central Business District of Cape Town; the north -south links are more efficient than the east - west links due to the physical requirements of bridging two rivers which run in parallel, as well as a Class 1 Freeway (M5).

The current north - south links include Liesbeek Parkway, off which only one road, Station Road (and its extension as a class 4) allow access into the study area. This includes access to the River Club, Valkenberg, SAAO and Wild Fig etc. on the eastern side of Liesbeek Lane and the Hartleyvale sports precinct to the west.

The other dominant north south link is Alexandra Road which allows access to the Oude Molen precinct, Maitland Garden Village, Alexandra Institute and Ndabeni Triangle. Major road infrastructure capacity problems were identified, primarily the capacity of the Berkley Road and Raapenberg Road intersections providing access onto Alexandra Road and the provision of additional lanes on Alexandra Road.

Berkley Road East (M5 to Sunrise Circle) is a Class 2 – Major Arterial, however it does not cross over the rivers. It is proposed to extend Berkley Road (as a Class 3- Minor Arterial) to link with Liesbeek Parkway/ Malta Roads.

These roads are proclaimed roads with a statutory minimum road reserve of 25m. These minimum reserves can be amended by mutual agreement between the Province and the City. Widening of the Liesbeek Parkway is proposed. This will result in removal of much of the existing parking available along this length.

4.4.3. Internal vehicular circulation within the precincts

- Station Road extends into the precinct providing access to the River Club SAAO and Valkenberg , but does not extend beyond Valkenberg and the SAAO ending in a cul de sac.
- Liesbeek Lane provides access to the Wild Fig, and surrounding uses and also ends in a cul de sac.
- There is one road bridge across the Black River and the M5 that connects Valkenberg estate with the forensic unit located on the eastern bank of the Black River. However, this is a single lane road and has a boom limiting access.
- No other pedestrian bridges are available for NMT in an east west direction.

4.4.4. Public Transport and NMT

- There are currently no IRT routes which service the study area directly, although there are planned services that will pass Sunrise Circle.
- There are no official minibus taxi routes on Liesbeek Parkway or Alexandra Road, and only limited services along Berkley Road.
- There are existing bus routes on both Alexandra Road and Liesbeek Parkway, as well as on Berkley Road and Voortrekker Road, which provide access to the broader metropolitan area. The Alexandra Road bus routes

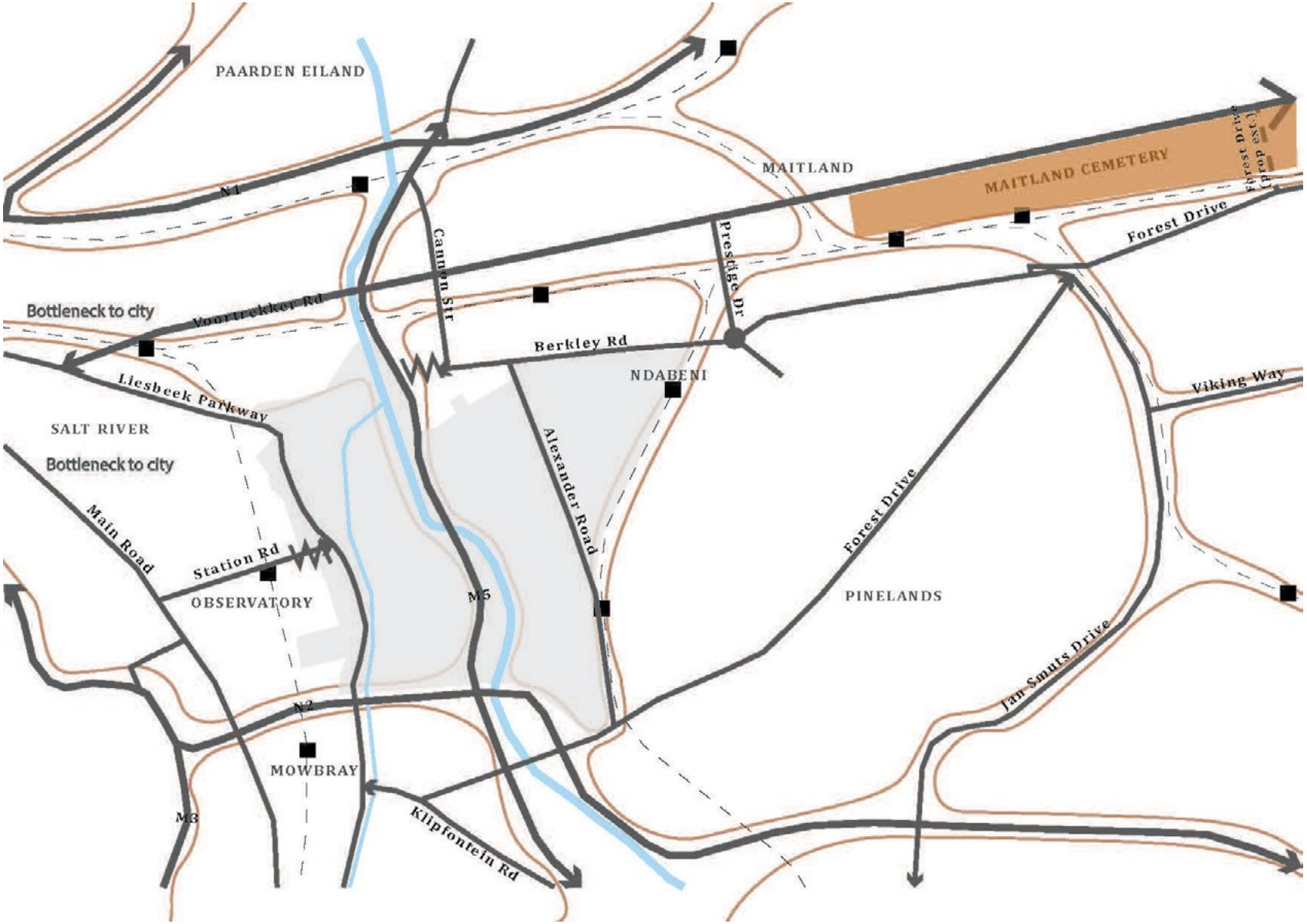


Figure 4.28. Diagram of problems with the existing road network grid

serve Epping, Mitchells Plain, Khayelitsha, Delft and Blue Downs. A single bus route on Liesbeek Parkway connects Mitchell's Plain Town Centre with the Cape Town CBD.

- While there are six (6) rail stations within walking distance of the site, the pedestrian environment is unsafe and has limited permeability on foot, due to over scaled road infrastructure and the rivers (as barriers to movement on foot). Large areas with low densities and no activity, also present a challenge for safe walking and cycling, particularly between Ndabeni Station and employment opportunities and Maitland Station and the Study Area.

4.4.5. NMT

The major desire lines through the precincts are between Ndabeni Station and Oude Molen; Maitland Garden Village and the shopping precinct in Pinelands over the rail bridge; and Pinelands Station to Vincent Pallotti and Valkenberg. The nearest clinic for Maitland Garden Village is via Cannon Road, through to Voortrekker Road , Maitland.

However, the provision of additional NMT routes across the Black River at the current vehicular bridge and in the future as an extension of the Station Road will encourage and support access across the site.

In addition, there is an existing NMT route along the western bank of Liesbeek River. The opportunity exists to extend this NMT route along the Liesbeek River bank with the development of the River Club allowing public access to this private land.
NMT infrastructure includes crossing facilities at the signalised intersections along Liesbeek Parkway. The cycle facility along Liesbeek Parkway, extending into Malta Road has been established as a major new cycle route linking the inner southern suburbs with the inner city area.

With the emphasis on promoting public transport and NMT modes in favour of private modes, continued emphasis should be placed on creating Class 1 cycling facilities (separate, exclusive alignments) and Class 2 facilities (part of road reserve, but separate from roadway) as a network throughout the site, to facilitate integration between precincts.

4.4.6. Future Network

The following network changes are planned by the City:

- Berkley Road to be upgraded to a dual carriageway to the east, up to Sunrise Circle.
- Berkley Road to be extended westward from its western ramp terminal with the M5 across the canal and through the northern part of the site, to intersect with Liesbeek Parkway. This will create a key new link to improve (east-west) network integration, and provide access onto the site. Its westward extension into Malta Road will provide an important new link with the Inner City Area.

Transport Opportunities and Constraints

The current transport network is **constrained** by the following factors, which have an impact on densities proposed for the site.

- There are no IRT Trunk Routes planned going through the local area, and the network plan as it is currently formulated does not include any long term routes in the vicinity of the site.
- Feeder routes can be provided to service the area, but there are currently limited east west road connections across the study area.
- There are no official minibus taxi routes on Liesbeek Parkway or Alexandra Road.
- While there are six rail stations around the site, only Pinelands and Ndabeni Stations are within 500m walking distance from portions of the site closest to these stations, on the east side. However, Observatory and Maitland Stations are within 800m walking distance.
- In addition, the rail system is experiencing serious operational challenges. Based on the assumption that these challenges can be overcome, and new services introduced, some additional capacity can be established. As noted earlier in the report, the spare capacity to serve public transport demand towards the City in the mornings, is likely to remain limited.
- Access for NMT across the site (including the Black and Liesbeek Rivers and the M5), is currently not possible. A narrow single lane vehicular bridge serving Valkenberg Psychiatric Hospital does cross both the Black River and the M5, but is not currently open to the general public.
- The opportunity exists to extend a link westward from Liesbeek Parkway and into sports-fields, to intersect with Willow Road. Willow connects with Strubens Road which runs along the railway line, and links with Mowbray Station, which could hence form a reasonably direct link for feeder services to be operating between this station and the site.
- The extension of Station Road from Liesbeek Parkway into Observatory Road should be extended across the Black River and M5 to link with Alexandra Road. It is proposed that this link be used for public transport vehicles only and NMT.
- The three new east-west linkages in the form of Berkley Road extension, Station Road/ Observatory Road extension, and the NMT Valkenberg Estate link with Liesbeek Parkway and Strubens Road establishes a grid pattern for the site which could help the formation of precincts on the site, and integrate the site with its surroundings.

Figure 4.29. Current movement network in and around study area

4.4.7. Sanitation

The sanitation infrastructure servicing the study area ultimately drains to the Athlone WWTW. The East side of the study area is serviced by the Maitland interceptor/outfall, whilst West side is serviced by the Woodstock interceptor/outfall. These two bulk sewer outfalls reach a confluence at Settlers Way, where the combined flows gravitate to the Raapenberg pump station via a 1375 mm diameter sewer with a **full flow capacity of 1375.49 l/s and current maximum flow of 918.15 l/s.**

The **Raapenberg pump station** and dual 800mm diameter pumping mains also have some constraints, and **will require upgrading in the near future**. The northern area of TR-LSDF East can be serviced by the Sunrise Circle sewer, which drains to the Langa minor pump station, which in turn delivers flow to Athlone WWTW. This sewer system has planned Master Plan projects, which when implemented, will create an available flow capacity of 31.38 l/s peak dry weather flow, while maintaining a 30% hydraulic spare capacity.

The COCT has confirmed that **the Athlone WWTW is at capacity**, and is due for an upgrade. However, there is an option to divert sewage to the Cape Flats WWTW, which has sufficient spare capacity to accommodate development within the TR-LSDF area. Should future development on the site need to utilise the existing capacity at the WWTWs, upgrades and new infrastructure would be required. The extent of upgrade and new infrastructure required, would be determined by the extent and type of land uses to be accommodated on the TR- LSDF site into the future.

Western edge of Black River

Currently a 225mm dia. pipe to the south of the River Club located in Observatory Road services the River Club as well as the SAAO and Valkenberg Hospital Complexes.

Given the additional flows that are proposed it is anticipated that the 225mm dia. main will not have sufficient spare capacity to serve the River Club and other developments proposed and it is likely that a more direct connection to the bulk main is required. It is also reported by the CoCT that **the Raapenberg Pump Station experiences challenges during peak times** and is at capacity during these times.

Eastern edge of Black river

The existing water infrastructure east of the Black River is insufficient for the envisaged development. This will need to be upgraded.

Sewer flows from the northern part of the Berkley Road Triangle Precinct would be pumped by the Langa minor pump station to the Athlone Waste Water Treatment Works. This pump station requires an upgrade, which has been identified in the City of Cape Town's Master Plan.

Further upgrades will be required to existing sewer infrastructure east of the Black River in order to meet the anticipated future demand.

On-Site Storm-water

The existing local storm-water network drains towards the Liesbeek and Black Rivers. The existing piped system is only sized for minor storms, whereas larger storm-water runoff escapes overland into the river system. Of the six major points of entry for piped storm-water into the rivers, three of these result in occasional local flooding. Further development of the TR-LSDF may require that the existing formalised storm-water system be upgraded in places.

4.4.8. Electricity

Current capacity of local bulk electrical network

- Local bulk electrical network with defined spare capacity
- (12 MVA at 08/11/2018).
- Spare capacity will be allocated to any developers (within or outside TR-LSDF) on a first come- first-serve basis. Shared development contribution is payable.

- The River Club proposal alone has an expected demand of 10 MVA. The spare capacity for the greater TR- LSDF development will be only 2 MVA from the Koeberg Main Station. This is wholly inadequate for any meaningful size of development on this site.
- A new 132/11 kV Main Switching station on the Oude Molen Site is required

Electrical Network Expansion Threshold :

- Main Switching Substations (132 kV/11 kV) required in 50 MVA increments when spare bulk capacity is depleted. The standard land requirement per Main Switching substation is 80 x 80 m. Main Switching substations needs to be fully operational before any additional capacity could be made available. The lead time for such a substation is typically 3 years.

No	Electrical aspect critical for development	Framework rule	Exception to the rule and possible impact
1	Environmental and heritage impact of electrical expansion	All electrification projects will be aligned with the environmental and heritage requirements of the framework.	N/A
2	Electricity supply utility in TR-LSDF and surrounds	City of Cape Town, through the Electricity Generation and Distribution department.	N/A
3	Electrical demand modelling -Industrial/Commercial/ Institutional	Defined by latest CTEF-100 standard of the City of Cape Town.	Owners of a single property can request the notified maximum demand based on their proposed activity. This could be higher or lower than the guidelines in CTEF-100.
4	Electrical demand modelling - Residential	Defined by latest CTEF-100 standard of the City of Cape Town (this document is aligned to SANS 507-1/NRS 034-1)	Owners of a development on a single property can request the notified maximum demand based on their proposed development. If an internal network is not designed to CTEF-100, the CoCT may impose the alignment of the network to their standards if subdivision of individual dwellings is planned
5	Current capacity of local bulk electrical and network	Local bulk electrical network with defined spare capacity (12 MVA at 08/11/2018). Spare capacity will be allocated to any developers (within or outside TR- LSDF) on a first-come-first-serve basis. Shared development contribution is payable.	N/A
6	Electrical Network Expansion Threshold : Main Switching Substations (132 kV/11 kV)	Main Switching substations (132 kV/11 kV) required in 50 MVA increments when spare bulk capacity is depleted. The standard land requirement per Main Switching substation is 80 x 80 m.	A smaller or integrated substation footprint is possible. This will have to be negotiated with EGD and might attract additional contribution.
7	Electrical Network Expansion Threshold : Protected Substations (11 kV/11 kV)	Protected substations (MV/ MV) required in approximately 4.7 MVA increments for new developments. The standard land requirement per Protected substation is 14 x 20 m.	A smaller or integrated substation footprint is possible. This will have to be negotiated with EGD and might attract additional contribution

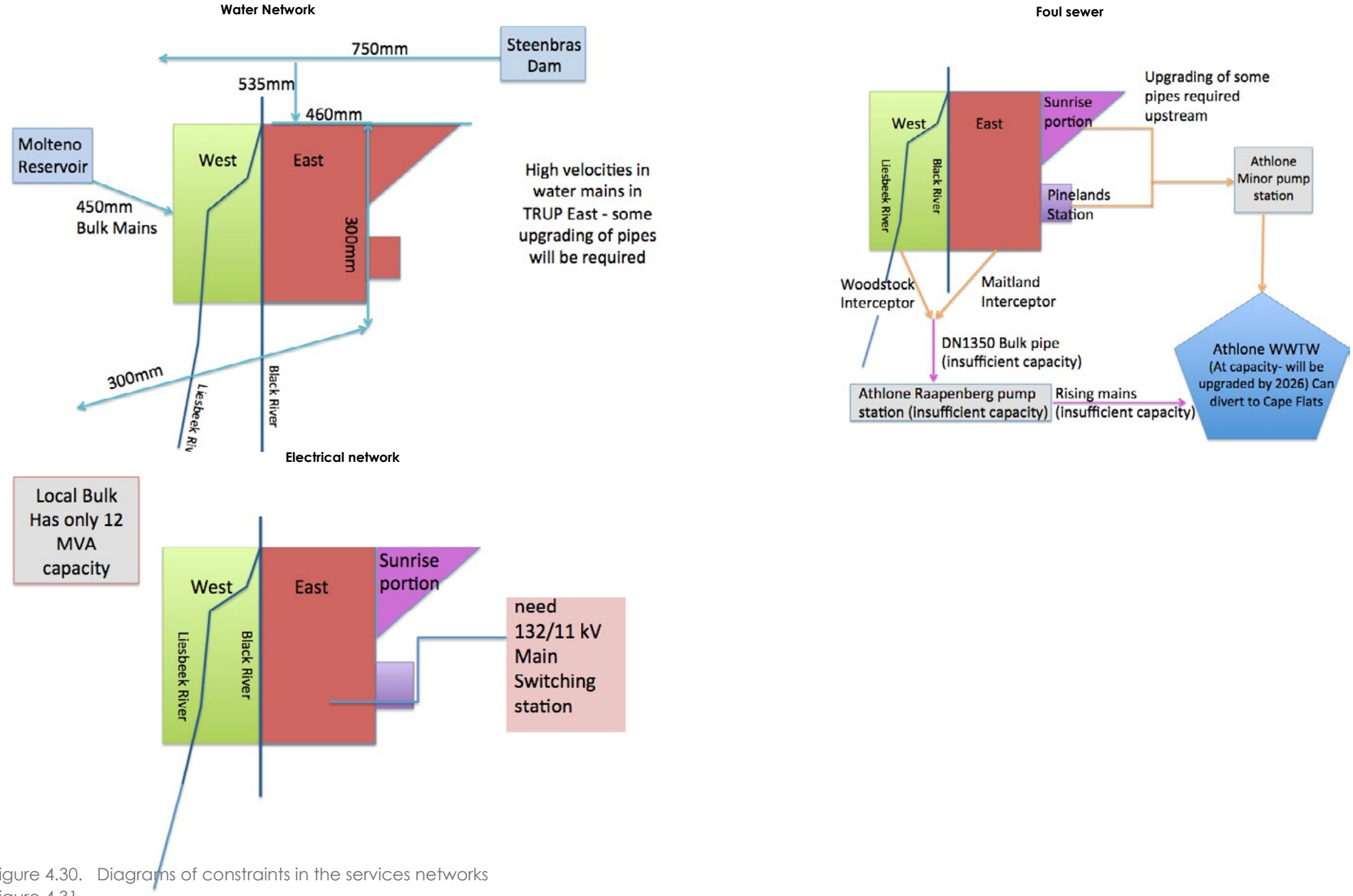


Figure 4.30. Diagrams of constraints in the services networks

Figure 4.31.

4.5. Heritage Informants

Heritage is an important contextual informant for the study area. The area is a mosaic of historically significant spaces and places. It illustrates landscape as a complex layering of memory and history, encompassing multiple eras and peoples. It must be recognized that these spaces have different meaning for many communities (including the First Nation People) and planning in this area, particularly at the precinct level should be framed to acknowledge and incorporate cultural heritage.

The heritage resources and issues are identified in the Draft Phase 1 HIA (Postlethwayt 2019)which itself incorporates all previous baseline studies and associated supplementary reports. It also includes a second supplementary (First Nations) report prepared by AFMAS. The following guidelines are broad brush extracts and intended to provide input into the Two Rivers LSDF for planning across the entire site. (See the Draft Phase 1 HIA for a comprehensive listing of heritage resources, significances and development informants) In addition, they are intended to provide a baseline to guide future heritage studies on a precinct by precinct basis. These studies note that the precinct based heritage work may require the undertaking of further historical or other studies by suitably qualified persons.

The area as a landscape is significant from a heritage perspective, comprising a unique series of sites, memories and structures of significance. Because of its strategic position in relation to the river systems and the historic pastoral routes to the north and south, it has a significant role in pre-colonial history in terms of the history of transhumance and the indigenous residents of the Cape and their struggles to retain their land. As a result, it plays an important role in the cultural identity of the First Nation.

4.5.1. First Nation

Whilst the official boundaries of the Two Rivers LSDF are fixed, these boundaries are not contiguous with indigenous understandings of the boundaries of the historic Two Rivers-area landscape. Rather, the official boundaries are a frame through which to look at the indigenous landscape, which extends beyond Two Rivers as a bounded geographical space and all that it contains, and temporally drills deep down to a pre-colonial territory imbued with indigeneity.

"To contextualize the significance of the precinct to the history and heritage of the First Nations various events in history that directly or indirectly relate to precinct are noted, which include:

- Epicentre of first and most successful resistance / anti-colonial battle in South Africa
- (Battle of Gorinhaiqua / D' Almeida, 1 March 1510)
- First area of official colonial usurping of land
- First Khoi-Dutch war
- Narratives of key figures in indigenous history tied to the site (Doman, Krotoa, Autshumato).
- Sacred site of remembrance and heralding the ancestors.
- Place where the !Nau ceremony is performed.
- Symbiotic relationship between indigenous people, "the soil, river and the stars" - separating the people from the land is like ripping out their soul.
- The environment, the fauna and flora were a significant part of indigenous cosmology and folklore (Eland, black-maned lion, jackal, praying mantis. Also ethnobotany associated with indigenous food, healing (medicine) and ritual practices.)

The site is complex and multi-layered. Parts of the study area demonstrate "a historically evolved landscape extending from pre-colonial to colonial times, where the links to the riverine landscape have played a significant and multivalent role in its use".

The study identifies specific areas which contain possibilities for commemoration, and memorialization of sites of living memory and associational value:

a) The Vaarschedrift and river confluence sites. Most migratory or transhumance routes were the beginnings of our road system as we know it today, and these were used by the indigenes for centuries before the arrival of the colonists.
b) The Oude Molen site (of associational value to the First Nation);
c) The ridge line between the Black and Liesbeek Rivers (associated with the barriers and palisades of the mid-seventeenth century); and
d) The associations of separation and barriers in the Ndabeni site (only part of which is included in the study area).

4.5.2. Intangible Heritage

The AFMAS report categorises five types of intangible heritage.

ICH Domain	TRUP Indigenous Narrative Element
1. Oral Traditions & Expressions	Stories of resistance & indigenous folklore
2. Performing Arts	Rieldans cultural dance
3. Social Practices, Rituals & Festive Events	!Nau ceremony
4. Knowledge & Practices Concerning Nature & the Universe	Indigenous ethno-botany & orature i.t.o. eland, lion and jackal, praying mantis.
5. Traditional Craftsmanship	"Matjieshuis" traditional hut made of reed mats and bent sticks.

a) The landscape presents an opportunity to be 'artefact' and enable reflection on the history of the site and the role it has played over time. Landmark buildings, formalised green spaces providing foreground to buildings, views, landscape features such as dominant slopes, ridge-lines, floodplains, wetlands and forested precincts contribute to the sense of place and add richness to the landscape setting. In informing layouts, they can add meaning to the development proposals by facilitating the telling of stories related to the site.
b) The heritage assets on site can serve as points of public interest and attraction. Each asset has the potential to act as a focal point of activity.
c) A great opportunity exists to link the various precincts and landmark buildings through a system of NMT paths, and to maximise on their tourism, cultural and recreational potential.
d) The intangible assets that require memorialisation present an opportunity to make a more inclusive space that acknowledges a broad range of cultures and backgrounds.

The indigenous landscape is thus viewed as a terrace of time - rolling back, and expanding through history, with each successive step down to the next terraced landscape, leading to the indigenous pre-colonial landscape. This is illustrated in Figure 4.32. Indigenous landscape- terrace of time. on page 81.

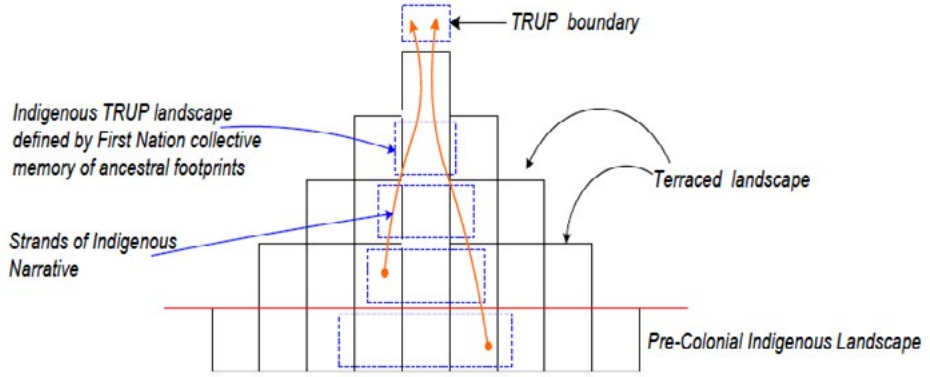


Figure 4.32. Indigenous landscape- terrace of time.

4.5.3. Possible Gradings for buildings/physical precincts to be confirmed

There are a significant number of buildings older than 60 years within the study area, as well as historical urban settlements within and adjacent to the site. A notable exception is the Berkley Road Industrial Triangle.

The Draft Phase 1 HIA notes or proposes the following gradings which will have to be confirmed when the detailed precinct planning and separate heritage process is done for each precinct. Note that the proposed grading does not prevent redevelopment of these sites.
a) Grade 1 area: The SAAO. This is a declared National Heritage Site.

b) Grade 2 sites: Oude Molen (Millers Cottage), and Alexandra Hospital (Old Administration Building).
c) PHSs (formally protected PHS's):

- Valkenberg Hospital, wards, quadrangles and service buildings;
- Valkenberg Manor house and related structures; and
- Alexandra Mill/Nieuwe Molen in the Alexandra Institute.

d) Grade IIIA structures and sites: Various smaller buildings in Valkenberg West.
e) Grade IIIB structures and sites: Various buildings in Valkenberg West and East (including the old wards in Oude Molen) and the older structures in the Alexandra Hospital Provincial Office Precinct.
f) Grade IIIC structures and sites: A house in Oude Molen and the main River Club building; amongst others.

4.5.4. Archaeology

Although there has been some archaeological investigation of the study area in the past, there has, to date, not been a comprehensive archaeological survey done. There are a number of early agricultural and industrial sites within the study area, as well as the potential positions of VOC redoubts and palisades. Some of these sites have already been lost, but nevertheless, there is some archaeological potential.

Portions of the CoCT declared Heritage Protection Overlay Zones (HPOZ) of Observatory and Pinelands fall within the study area. With the exception of the Ndabeni Triangle, the remainder of the site has been included in a proposed HPOZ.

Heritage Related Design Indicators

Postlethwayt (2019) provides statements of significance and Heritage Related Design Informants (HRDIs). The HRDIs were developed for a set of defined character areas, as well as at the level of the Study area as a whole. The HRDIs are critical informants to the planning of the Study area; support a phased approach to planning; and acknowledge that the site is both part of a larger single area pertaining to the pre-colonial indigenous landscape and comprised of different character areas. The defined landscape character areas include the river corridor; Ndabeni; the Alexandra Hospital and surrounds; Maitland Garden Village; Valkenberg East; Valkenberg West; The South African Astronomical Observatory; The River Club and Vaarschedrift; the Liesbeek Parkway corridor, and the Pinelands Station It is important to note that the HRDIs could change once the detailed precinct planning heritage impact assessments are completed.

Figure 4.34. Tangible and intangible Heritage is a summary of the main heritage design informants identified to date, for the purposes of guiding planning moving forward.

4.5.5. Buildings

a) The landmark buildings, including specifically the Valkenberg Administration building, the SAAO, Nieuwe Molen and the Oude Molen, need to be made more visible and potentially accessible, if they are to add value to the landscape of cultural and historical significance. However, there are some logistical issues with the functions of some of these buildings that prevent public access. Valkenberg Administration Building and the Alexandra Institution Administration Building are located within areas of high sensitivity and added security and it is not necessarily within the best interest of their patients and clients to allow for public access.

The SAAO can provide for more accessibility to the public within an approved development framework for that precinct as a place of scientific discovery. The SAAO site is a Grade 1 Heritage resource which limits development on this part of the site. However, its interface onto the proposed Station Road extension could be improved.

The Millers Cottage and site of the old Mill form a central focus of activity in the Oude Molen precinct and should continue to be a landmark and focal point of the precinct.

There are a number of buildings older than 60 years of age and graded buildings including the Millers Cottage which need to be assessed in future heritage

studies . Views towards the Black River and Devils Peak are also significant from a heritage perspective.

To preserve the relationship of the OM precinct to the river and the broader landscape, the well-established groupings of trees and the prominent views of the broader landscape should be preserved as far as possible.

Liesbeek Parkway Heritage related design informants:

This area has a strongly linear character area defined by the Liesbeek River and Liesbeek Parkway. It presents significant views towards the site and riverine wetlands particularly towards Valkenberg Manor, Valkenberg Hospital and the River Club. There is a significant view corridor linking the Raapenberg wetlands to Signal Hill

The area abuts the Observatory Heritage Protection Overlay Zone (HPOZ) which is characterized by predominantly single story small scale domestic buildings interspersed with recreation open space, particularly towards the roadway.

It is crossed by the historically significant Observatory (or Station) Road, which was the historical access route to the Royal Observatory and now traverses the whole site but is blocked at present by barriers to Valkenberg. The Hartleyvale stadium situated at the corner of Liesbeek Parkway and Station Road (not the contemporary hockey stadium next door) is a landmark and is of social significance as the site of early multiracial cricket and soccer. However, the structure itself is not conservation-worthy and may be structurally unsound.
There are several potential archaeological and historical sites within the area as historically agricultural establishments were situated at the edge of the wetland areas. They include Coornhoop and Vaarschedrift Westoe, Bellevliet and Onderneming. All but Vaarschedrift are buried within the high density tight grained historic suburban environments of Observatory and Mowbray.
The site is of historical significance as it contains sites and a complex matrix of routes (used by indigenous people and later by settlers) of historical significance. They include the farmsteads of Westoe Bellevliet and Bellevliet. The site is also of social significance as they low lying areas were used for recreational purposes. This use remains and forms a significant component of the social and community use of the site.

Vaarschdrift and the River Club: Heritage related design informants
Vaarschedrift area at the Liesbeeck River at the northern end of the River Club area is a possible site where historically a crossing point for transhumance pastoralists entering the Peninsula was located. The area is of very high symbolic and associational significance and should be investigated for archaeological potential.

The riverine landscape and topography is of visual and cultural significance and provides a narrative for the historical use of the site.

A recreational centre and a potential gateway to the remainder of the study area and related landscape, the River Club is situated on flat low lying areas west of the Black River. It is adjacent to Slangkop Hill which contains the South African Astronomical Observatory (SAAO).

While the River Club complex is a landmark and situated within a landmark site the Club building itself is not of outstanding heritage significance. The River Club site however does not exist in isolation within the study area

The River Club site currently provides a landmark green space and locale of high heritage significance in terms of First Nation narratives within the general area at a significant access point to the broader site. It is significant as an open remnant riverine space and is valued by the local communities as such. It contains significant views to and from the site towards heritage sites and towards the mountain (Devil's Peak and Lion's Head).

At the base of Slangkop Hill to the east and north-east is the Raapenberg Bird Sanctuary which, apart from its intrinsic ecological value, enhances the nature and appearance of a riverine estuary where the two River combine.

The cultural significances within the site are varied, with areas of outstanding heritage significance including at the Vaarschedrift area, extending to the Raapenberg wetlands and base of the Slangkop Hill. The heritage significance of the River Club site may be considered to provide a buffer zone and foreground space for the Slangkop Hill.

The South African Astronomical Observatory and the Slangkop (Observatory) Hill: Heritage related design informants.

The South African Astronomical Observatory (LCA 7)

This area is significantly defined by the presence of Slangkop Hill. It is possible that the 17th century stockade and palisades ran from Coornhoop along the Valkenberg Hill to the Slangkop Hill, overlooking the Vaarschedrift crossing. It may be therefore that this area was part of the first series of colonial barriers and exclusion which characterized the history of the contact period with the First Nation and is therefore of very high significance in terms of its association with pre- and early colonial indigenous history.

The South African Astronomical Observatory (SAAO) campus is situated on this landmark hill which historically had views of Table Bay and Signal Hill (it currently still has views towards Signal Hill where a repeater station was erected to relay time settings from the Observatory to ships in the harbour). It now comprises a campus of heritage buildings and spaces associated with the early nineteenth century establishment of the Royal Observatory. They not only have historical architectural and landscape significance but are also situated as rising out of a wetland area which contributes to the cultural landscape qualities of the site.

The institutional buildings are reached through a series of meandering roadways circling the hill. The Royal Observatory building which stands at the summit of the hill is a PHS.

This Observatory complex is of outstanding cultural and scientific significance and has contributed in international terms to the science of astronomy. It is an outstanding example of a layered heritage landscape, comprising buildings of architectural significance and activities of scientific significance set within a treed campus. The campus is of international scientific significance and has been the subject of a UNESCO World Heritage Site report. The entire site (the Observatory. Hill, open spaces, landscape features and buildings) has been declared a Grade 1 site.

Valkenberg West including Valkenberg Hospital, Valkenberg Manor, and surrounding landscapes (LCA 6)

Valkenberg West is a large and prominent site, which, along with the site upon which the SAAO is situated, forms the ridge-line of the First Frontier and all associated significances (see LCA1). It is significant landmark site, set between the Black and Liesbeek Rivers: a complex and multi- layered cultural landscape comprising intangible and tangible heritage.

The tangible heritage is contained within two core heritage sites: Valkenberg Hospital, set within a combination of later institutional buildings, supplementary buildings and a treed landscape; and Valkenberg Manor House, werf and surrounds.

Valkenberg Hospital is set on the crest of the Valkenberg Hill and maintains a dominant presence in the landscape - a presence that is reinforced by the architectural qualities of the buildings. The Valkenberg Hospital wards, courtyards and supplementary buildings to the east are declared as a PHS, while other significant buildings not within the core administrative precinct are graded as conservation-worthy.

Valkenberg Hospital is of outstanding historical architectural and scientific significance, although much of this history is one of pain. It was a purpose-designed medical institution set within wooded grounds. The site has been used for public institutional purposes since 1881. It has a long association with psychiatric care and was a progressive model of late nineteenth century asylum design. It was intended to be a "place Valkenberg East: Oude Molen complex and grounds incorporating the apart" from the town, a characteristic

which foreshadowed later racially based notions of segregation which were strongly associated with the area for many years.

Set on a prominent and visually exposed promontory, it has significant landmark qualities which contribute unique cultural landscape qualities. While there are series of buildings of significance within the extended institutional landscape, the core administration area is of particular significance. It has an east west axis and is of primary significance in terms of spatial, historical architectural social and aesthetic value.

In terms of context, the hospital's position on an elevated promontory between two river systems occupied by two major historical institutions– the Astronomical Observatory and the Valkenberg Hospital make it part of a highly significant landscape which follows the topography and riverine qualities of the area.

The Valkenberg Manor house, werf and surrounds includes the Valkenberg homestead, its riverine setting, graveyard and supplementary buildings. It is set at the edge of the wetlands, with unobstructed views towards Devil's Peak. This gives the building a strong landscape context lending additional significance and stature to the werf.

It is of significance for historical, architectural and aesthetic reasons. Valkenberg Manor and werf is of high historical significance as one o the last remaining and best preserved werfs along the Liesbeek River. It is a historically layered site having first been used for nomadic pastoralism, followed by agriculture and the construction of the werf, later extended to form the first Valkenberg hospital and later the Porter Reformatory.

Valkenberg East: Oude Molen complex and grounds incorporating the F-shaped Wards (LCA 5)

The Black River slopes rise to a linear pattern of buildings of heritage value set with green and vegetated slopes. The Oude Molen Complex is a focal point for the site. It consists of a series of related buildings including the Miller's House, or homestead, which is a very early historic structure. The F-shaped wards are a linear series of structures of heritage value spaced along an access route.

Visual spatial qualities are significant both in the foreground spaces, and significantly in the sloping rural landscape leading to the Oude Molen site which provides it with much of its contextual and aesthetic significance.

The site is of outstanding heritage significance for the following reasons:

- It is of associational, cultural and social significance as it is associated First Nation who have historical links with it and currently use parts of the site for ceremonial and gathering purposes. The site is a significant one from an historical/archaeological perspective as it contains the site of the old VOC mill. It is of historical significance because it contains the remnants of an early historic werf (early eighteenth century). It is of historical significance as the place of banishment and imprisonment, for the Zulu king, King Ceteswayo.
- The F-shaped wards are of historical significance as an example of segregated medical treatment and apartheid. It is of contemporary cultural and social significance and is of value to the community as a community space, an open space ecological centre.
- As with other precincts, the matrix of intangible heritage footprint that extends over the entire Two Rivers landscape is recognized. Social significance that explores the wards as a site of conscience related to past practices of designating mental illness are of importance

Maitland Garden Village: Heritage related design informants.

- Maitland Garden Village is one of the earliest Garden City inspired designs in Cape Town and as such has some historic significance. It consists of a formally designed self-contained, residential precinct centred around a public open space along 'Garden City' lines.
- Community facilities are placed to the north and west. Its position has scenic value as it is situated on the crest of the Black River hill and has views across to Devil's Peak.
- The buildings have a consistency in terms of scale, grain and design. It has retained a considerable degree of authenticity and coherence. It has social significance as the entire site has been graded as a IIIB i.e. a

settlement of considerable local heritage significance, although individual elements would need to be graded independently and do not all have the same level of intrinsic significance.

Alexandra Institute: Heritage related design informants

- This area comprises a largely hidden series of historic institutional buildings, many of high architectural quality set within a flat and open landscape. A central open field surrounded by palms is a major structuring element.
- The impact of the institutional buildings is reinforced by an open foreground space.
- Impact of the nodal clustering of the heritage institutional building cluster has been degraded by ad hoc placement of later additional groups.
- The site, formerly a werf, also contains the eighteenth-century Nieuwe Molen, which is a PHS. The Mill is a significant built structure symbolising agriculture and early industry of the region; and, with Mostert's Mill, one of only two remaining windmills in Cape Town. At a result of later institutional development to the south and south east, the Alexandra Mill is largely hidden from view. The Alexandra Mill has channelled views up from the river concourse which gives a distinctive quality to the ridge-line on which the Mill is situated.
- The Alexandra Institute Precinct is of historical and scientific cultural significance as containing the eighteenth-century Nieuwe Molen. It is also of architectural significance as containing a fine grouping of Cape Revival Institutional buildings and related open spaces. It is of historical (archaeological) significance as being the site of a large farm opstal and Boer War encampment (both demolished). It is of socio-historical significance as an institution for the mentally ill and those generally excluded by conventional society.
- As part of the greater Two Rivers landscape it is also of significance as part of the matrix of the First Nations' intangible heritage footprint

Ndabeni Industrial Triangle

- Ndabeni is a flat industrial area with an absence of visual heritage landmarks and heritage conservation worthy buildings.
- It is however of historical and associational significance in terms of the history of segregation in Cape Town, as the area to which people were first removed after the 1901 Bubonic Plague epidemic. Black residents were (people of varied backgrounds, deemed by the authorities as alternately "Native" or "African") forcibly moved from central Cape Town and District 6 to hastily built basic accommodation in Ndabeni. It should be noted that this current precinct is just a small portion of the affected historical precinct(1901)
- Ndabeni site and many were accommodated east of the triangle.
- Ndabeni and Pinelands were part of the Uitvlugt pine plantation planted by prisoners from Robben Island in the 1870's.
- Ndabeni also has associational and historical significance because of a link to Chief Langalibalele who as a prisoner was tasked with the planting of pine trees on the Uitvlugt (Pinelands) location.
- As part of the greater Two Rivers landscape it is also of significance as part of the matrix of the First Nations' intangible heritage footprint

Pinelands Station Precinct

There are no heritage resources of intrinsic significance. Development opportunities exist provided the design intent of the radiating roads from the station is respected; the retention and/or replacement of the mature tree lines are maintained; and intermediate scaling restrictions, including height and bulk restrictions, must apply on the immediate periphery to retain the scale and contextual quality of the original residential areas.

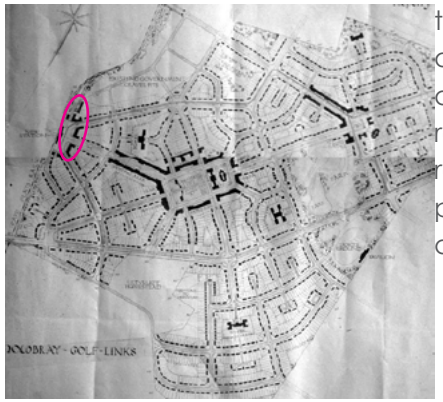


Figure 4.33. Pinelands layout of initial development c1920 (Source Cape Archives, M4-1902)7 (Coetzer N 2009).

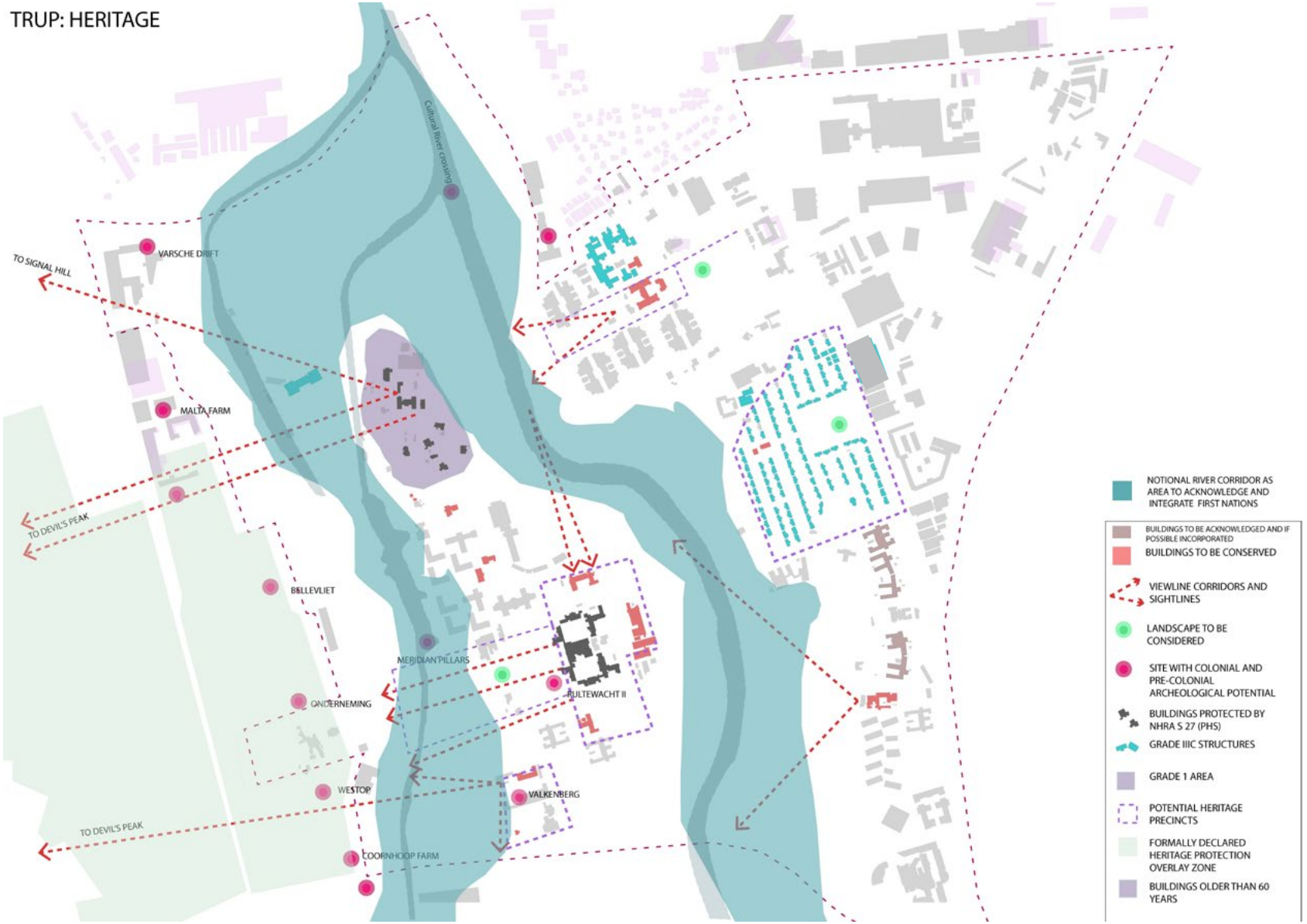


Figure 4.34. Tangible and intangible Heritage

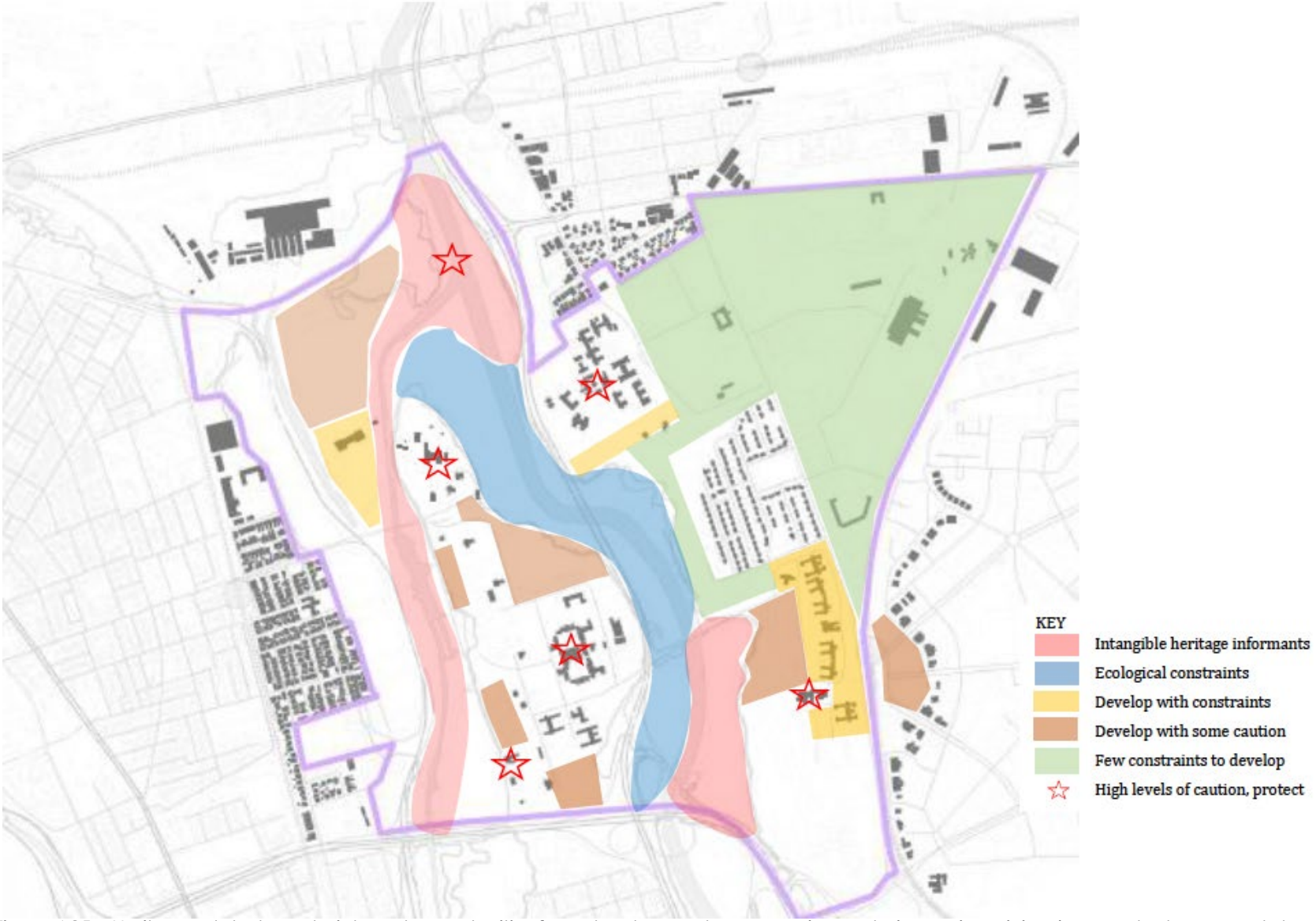


Figure 4.35. Heritage related constraints and opportunities for redevelopment, re-purposing, restoring, re-imagining (conceptual areas, not development footprints)

5. Summary of main informants and objectives

To summarize the contextual analysis of the Two Rivers LSDF the following points are reflected as the most important informants to be addressed in the development framework plan:

5.1. Challenges

- **Urban structure: Isolation , Shortage of housing and economic opportunities**

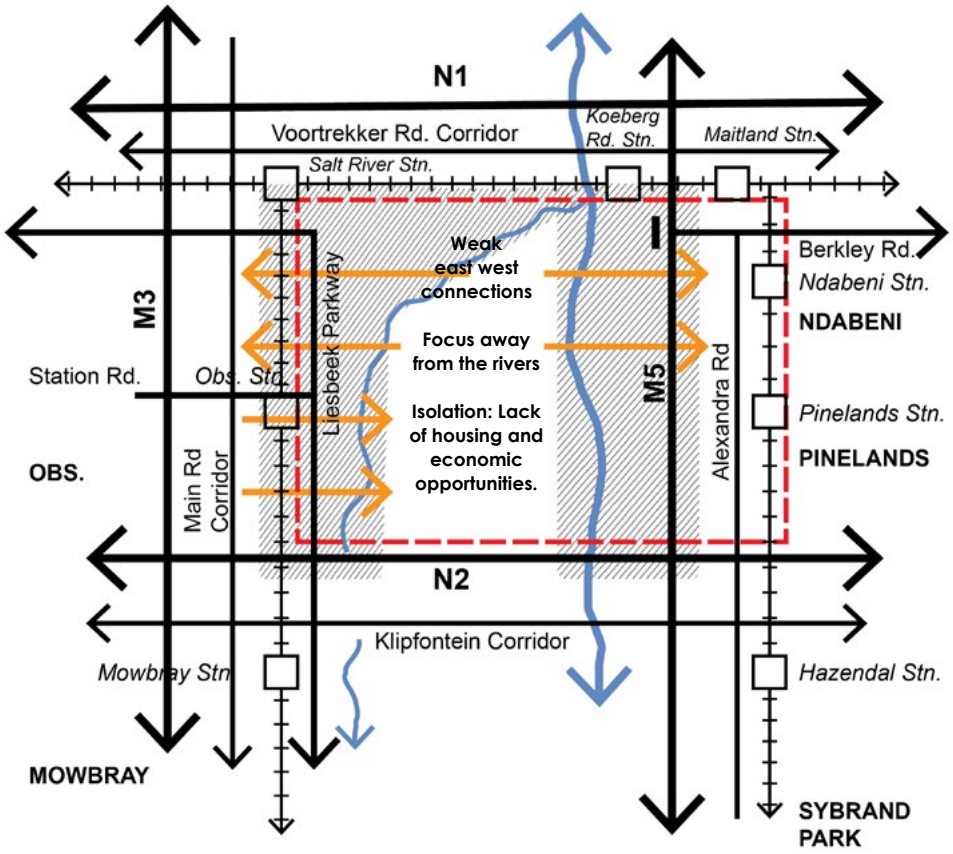
Integrating this area as part of the City is critical, given its proximity to the CBD and its location within the Urban Inner Core. The challenge is how to obtain highest and best use for the site in order to fulfil its urban development potential. The urban structure of the area suffers from a lack of spatial definition of structuring elements, thus resulting in diminished legibility and local orientation. Urban restructuring of the LSDF area is required to anchor critical public links with new development areas or enhancement of existing landmarks. East west linkages across the study area are extremely weak and therefore additional routes are needed. Large fenced off/or walled institutions do not interact with the surrounding environment or with each other. Resulting in large swathes of "dead space" with no housing or economic activities. Activating the edges of these institutions where there is public access is important e.g. along Alexandra Road and portions of Station Road extension.

- **Movement: Lack of integration**

The study area does not function effectively as a pedestrian environment and does not have the necessary infrastructure in the form of paths and links to public transport-stations, or pedestrianized areas without the necessary supporting infrastructure to support such movement. Critical public links between local movement generators, such as industrial employment centres,in Ndabeni shopping precincts in Observatory and public transport stops/stations, should be enhanced.

- **Physical barriers and a lack of integration**

The inward-looking urban structure results in substantial vehicular movement along the edges of the area, with physical barriers between precincts. Non-motorized transport interventions are required specifically to overcome major barriers to pedestrian movement (such as, over major roads and river corridors) and enabling universal access to railway stations(especially Pinelands & Ndabeni).



- **Loss of diversity and water quality/management of river corridors**

The site is mostly transformed (estimated (as much as >90%). This implies that pristine habitat has been replaced by urban development and landscaping. Some of the wetlands at the confluence of the Liesbeek and Black Rivers may be relatively undisturbed, however there is almost no natural vegetation remaining. The water quality of the Black River is not suitable for human contact. The wetlands require protection from encroachment.

- **Cultural diversity and heritage**

Cultural diversity and heritage to be maintained and enhanced. The challenge Is to find an appropriate range of expressions.

5.2. Opportunities

- **Land availability: contribution to integration**

Several public and private mixed use infill opportunities exist within the LSDF study area, thus enabling the development of a more integrated urban fabric. Several of these opportunities involve the rationalization of underutilized state owned facilities within the area. The large areas of underutilised state land cannot be perpetuated given the current imperatives for spatial justice and urban restructuring.

- **Centrality and the importance of the site within the municipal area.**

The central location of the study area within the Municipal area and the fact that it falls within the Urban Inner Core outlined in the MSDF indicate that it is likely to benefit from several high profile infrastructure development proposals, most notably :the development of the River Club mixed-use development and the extension of Berkley Road as a direct result; the possible development of the Cape Town City Stadium and possibly the development of an upgraded swimming facility in the Hartleyvale Precinct; the development of a mixed use node at the Berkley Road Industrial Triangle and extension of the CHTP facility; and the SKA campus and office building. Although some of the proposals around the River Club include development in the flood plain. The mitigation measures to prevent flooding must be offset against the additional jobs, economic development and contribution so spatial restructuring that possible developments will bring. Any infilling of the floodplains must be accompanied by rehabilitation of the river system and restoration of habitat and indigenous vegetation.

- **Management of River Corridors**

The opportunity exists to rehabilitate the river corridor edges through a coordinated management body. The businesses in the area would need to form part of the management structure and contribute to operational costs and management. Existing weir to Liesbeek Canal to remain with rehabilitated profile and existing diversion to Old Liesbeek River to be repaired.

- **Heritage (tangible and intangible)**

The opportunity exists for uncovering and celebrating heritage and giving meaning to multiple conditions and identities; celebrating different narratives.

Opportunities to meet key development objectives for the LSDF, in line with the COCT IDP objectives and SPLUMA are as follows:

Strengthening the economic vitality; Expansion of the economy further to create more employment opportunities especially along activity streets and near marginalised communities. The importance of social inclusion including housing for the poor is a strategic priority.The potential exists for approximately 15 000 jobs to be created through the developments in the study area.

Spatial Justice and Urban Restructuring: By locating housing for the poor closer to urban opportunities, travel distances are reduced, convenience is increased, and quality of life is improved; Up to 6000 social and or FLISP housing units can be provided through the development of this local area.

Environmental Resilience: By protecting the ecological corridors and investing in more sustainable energy and water supply systems the local area can strengthen the city's ability to mitigate some of the impacts of climate change

such as flooding and storm surges.

Urban: Mobility and access; A major concern is mobility, as it affects urban efficiency. Part of the vision for the study area is to enhance the transport network though development of gaps in the transport network such as the Berkley Road Extension and Station Road Extension(Public Transport). This also includes the development of strategic vacant land and the intensification thereof to support TOD.

Urban Sustainability: By promoting intensification to enhance Transit Oriented Development(TOD) the efficient use of land and infrastructure is enabled, thus protecting natural assets;

Social Transformation: By creating and investing in quality institutions, facilities, amenities, quality public space and cultural landscapes that allow for layers of heritage to be made visible, the coming together and sharing between a diverse range of people and cultures can be enabled. Consequently a network of cultural spaces and public places is envisaged within the framework.

6. Vision: Urban Structuring Informants/ Spatial Strategies

This chapter describes the concept, strategies and policies in support of the spatial vision. It culminates in a coherent vision and spatial plan to guide and direct decision-making that is binding on the City, WCG and all land owners within Two Rivers.

The elements of the chapter are based on:
• Three spatial strategies drawn from the IDP, MSDF and associated sectoral and spatial policy statements;
• Development directives: environmental, resource, heritage and risk related spatial aspects ordinarily governed by additional or parallel regulatory processes beyond those associated with land use process and applications made via the MPBL.
• A series of maps that collectively indicate an interpretation of the Two Rivers spatial vision, development directives, land use informants and investment priority areas.

Collectively these components provide direction for strategic developments and infrastructure investment and seek to promote a rational and predictable land development environment (SPLUMA S12(1)(l)). In addition, they provide the basis for a more detailed review of future precinct plans.

Spatial strategy 1: (connect /integrate) Building an inclusive, integrated, vibrant city The City is intent on building a more inclusive, integrated and vibrant city that addresses the legacies of apartheid. This study area is at a strategic location within the City at the confluence of the Metro South East Integration Zone and the Voortrekker Road Integration Zone. It is also predominantly state owned land. It therefore offers a unique opportunity to address existing imbalances in the distribution of different types of residential development. The desired outcomes are a greater mix of income groups, land uses, population density, and the adequate and equitable provision of social facilities, recreational spaces and public institutions.

Imperatives for this spatial strategy are:
• Forging public-private partnerships to provide and diversify integrated housing delivery; the River Club and Oude Molen Precincts are examples where this kind of integration is possible.
• Identifying, acknowledging, conserving and managing the heritage resources, cultural landscapes, cultural narratives, cultural conflicts, river corridors and spiritual places fundamental to this area's unique sense of place in line with legal requirements, including those of the National Heritage Resources Act;
• Celebrating Two River diverse historical legacies through appropriate management of urban form, architectural design, signage and artwork, and the various design guidelines provided in the precinct guidelines;

Spatial strategy 2: Manage urban growth, and create a balance between urban development and environmental protection(Enhance/Protect Biophysical/Heritage Resilience)
The Two Rivers precinct is located within the urban inner core which promotes an urban form with higher densities and mixed land use patterns, supported by an extensive and efficient bus rapid transit (BRT) and rail network. At the same time, environmental resources should be protected and enhanced.

This can be achieved through more efficient use of infrastructure; effective and efficient public transport systems and social amenities.
Imperatives for this spatial strategy are:
• making more efficient use of non-renewable resources, such as land, water and biodiversity, including protecting and maintaining existing river resources (this includes a move away from canalization of river edges).managing existing and future water supplies;
• using the natural environment to support spatial justice by enhancing access for all citizens to a quality open space network and NMT route along the Liesbeek River, offering community, recreational, non-motorised transport

and economic opportunities;
• taking into account biodiversity, aquatic resources and networks in the precinct plans and respecting areas of no development and limited development.
• maintaining and creating quality, safe open space systems alongside the river corridors and public spaces, utilizing partnerships and commitments from both the public and private sector to optimise existing facilities, whilst strategically locating new ones ; and
• planning and managing collaboratively in creative and innovative management arrangements particularly around the river corridors and protected areas to ensure operational sustainability and reduce operational costs.

Spatial strategy 3: Plan for employment, and improve access to economic opportunities (Activate economic)
Two Rivers although centrally located within the Urban inner Core is isolated due to gaps in the road network. This inhibits the area and by extension the City's immediate and longer-term economic prospects. The extent to which the local area realises its spatial development goals is directly linked to its ability to sustain employment-generating economic growth in the medium term and to reduce accessibility costs for the urban poor.

Imperatives for this spatial strategy within the study area are:
• the facilitation of integrated transport and land use through mixed use development along activity streets;
• creating and attracting 'job-rich' investment that will ensure integrated, sustainable communities by providing new and maintaining existing infrastructure, particularly in the Oude Molen, Ndabeni and Transnet/River Club portions of the Liesbeek precincts.
• prioritising investment in the improvement of public transport systems and linkages (e.g. Berkley Road extension, Station Road PT and Alexandra Road upgrading) to facilitate more convenient and affordable access to employment opportunities, natural resources and social amenities; Providing secondary public transport feeder services that traverse the study area.

These strategies are elaborated further below.

6.1. Connect/Integrate Urban

To connect the Precinct to the local area and in so doing facilitate integration of communities and enable local residents to access urban opportunity affordably.

Strategies to help achieve this objective include:

a) Enhancing the Vehicular, Public Transport and NMT routes around and where appropriate through the local area for efficiency.

b) Promoting safety especially for pedestrians through activity along NMT routes and increased surveillance.

c) Spatial Justice through integration projects, mixed income housing and job opportunities.

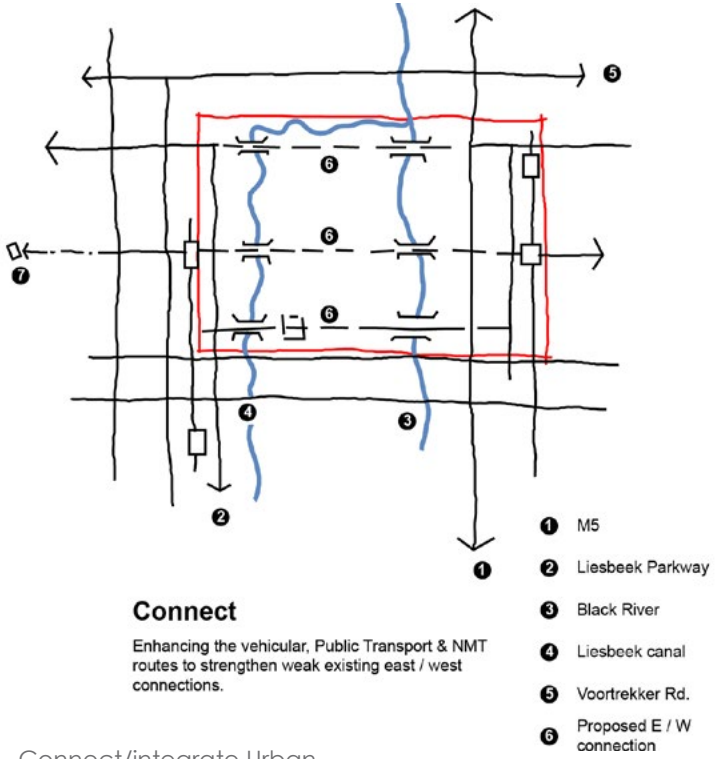
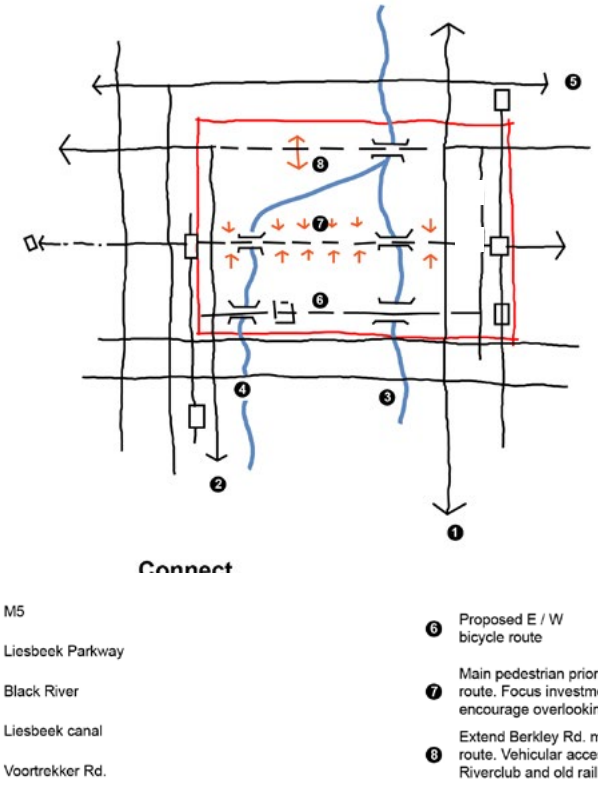


Figure 6.1. Connect/integrate Urban



Spatial Strategy

Reinforce missing **east - west links** in the form of Berkley Road extension, Station Road extension and a stronger link to Valkenberg and Oude Molen.

Promote NMT along north south routes at Alexandra Road and along the River corridor.

Primary accessibility corridors :

- North south_ Liesbeek Parkway, M5,
- East West_ Liesbeek Road Extension , Station Road extension
- N2
- Internal access linkages between Oude Molen and around Valkenberg Estate. Reinforce Transit oriented development around station precinct especially, Pinelands, Ndabeni, Maitland

6.2. Enhance/Protect Biophysical/ Heritage Resilience

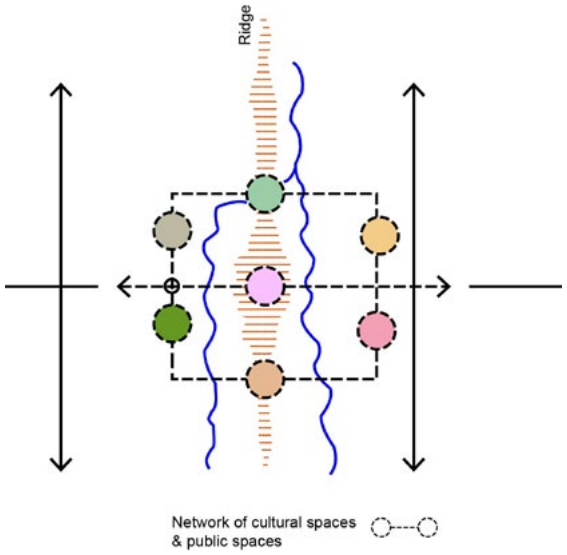
To enhance the sensitive ecosystems, river corridors and cultural landscape.

Strategies to help achieve this objective include:

a) Structuring of the River Corridors into management zones that allow for collaboration and focused funding for rehabilitation and improved water quality;

b) Conservation of sensitive ecological areas through limited access while promoting access in less sensitive areas;

c) Acknowledgement and celebration of the cultural heritage and multiple layers of history including historic structures , historic landscapes and opportunities for gathering and ritual. Creating a network of cultural spaces and public places.



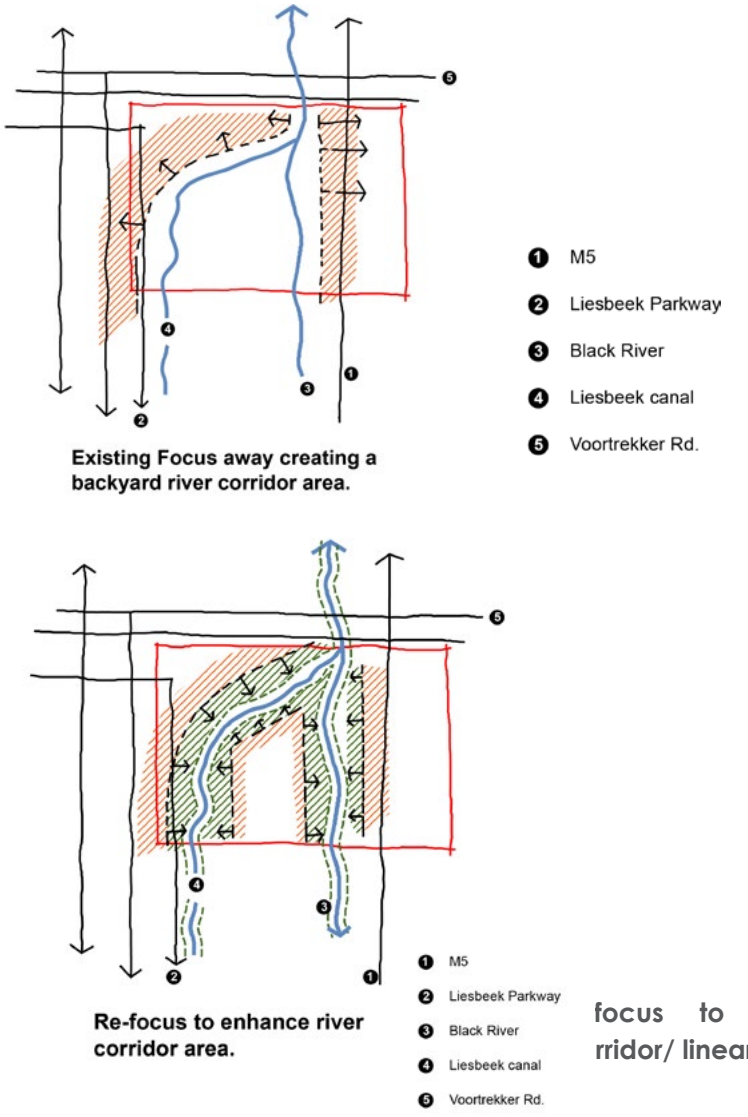


Figure 6.2. Spatial concepts enhance/protect

6.3. Activate Economic Opportunities

To create a vibrant, safe, efficient inner city environment.

Strategies to help achieve this objective include:

a) Location of particular land uses, especially residential development, strategically to provide surveillance over key public spaces, day and night; and

b) Provision of social infrastructure and regional sports facilities to enhance current communities access to facilities.

c) Promotion of job creation opportunities in the industrial area focused on opportunities in the health and science industries.

d) Opportunity for retail and office at most accessible points, e.g.. Berkley Road

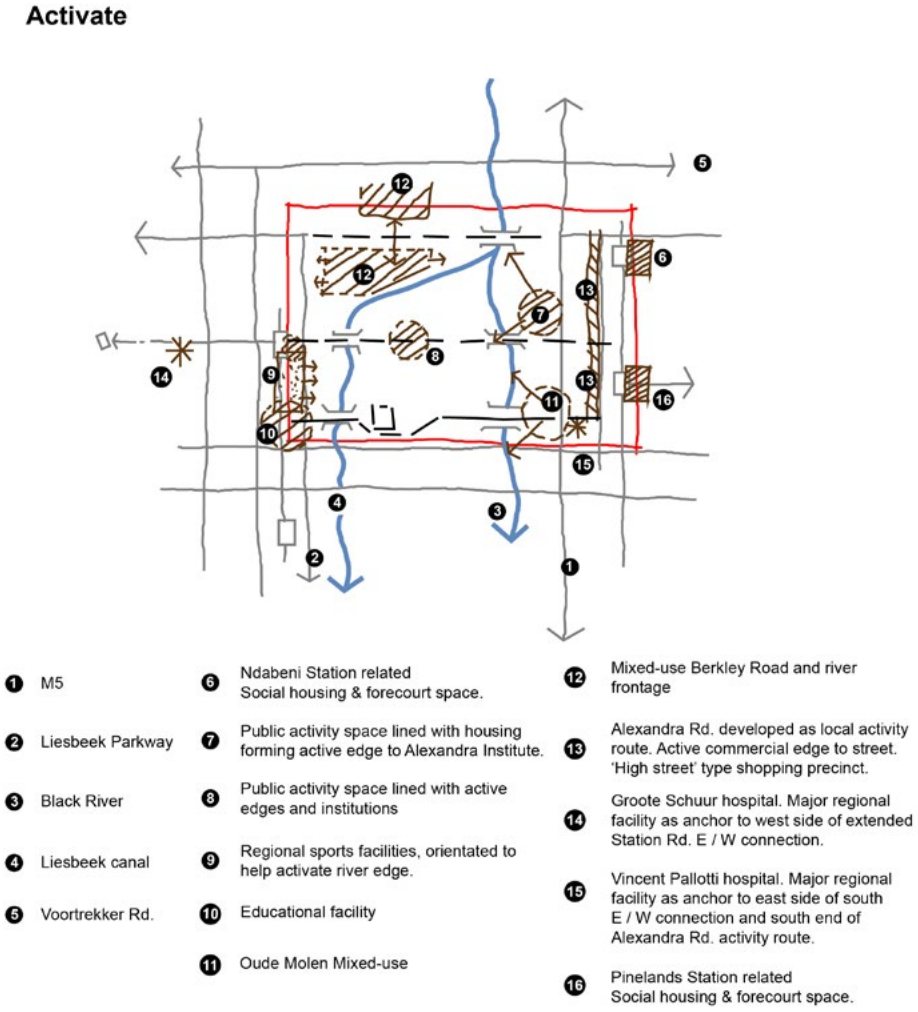


Figure 6.3. Activate economic opportunities

6.4. Urban Structuring Informants

Urban structuring informants are spatial tools and concepts required to achieve specific development goals and objectives. Management and implementation intensity of these structuring informants are tools for redevelopment and development implementation. Structuring informants should operate at a variety of levels and scales from a Metropolitan to neighbourhood level.

The following structuring informants are relevant to the study area, supporting of the LSDF :

- Local Nodes
- Activity Streets
- Infill and Densification
- Containment, continuity and Protection
- Strategic Land
- Movement Network

6.5. Nodes

Nodes

Structuring Informant : Local Nodes

A node is an intersection or junction point where activity occurs. Urban nodes are characterised by their intensity, mix and clustering of activity or land use.

Nodes are generally located on transport corridors and have high levels of accessibility to public transport facilities (Rail Stations and Public Transport Interchanges), road intersections and non-motorised transport (particularly at the local level). They reflect different levels of investment and support the strengthening of interlinking corridors and networks.

Nodal development improves the operational viability of public transport services (through improved seat renewal and bi-directional flow) and provides equitable access to local residents and neighbouring communities.

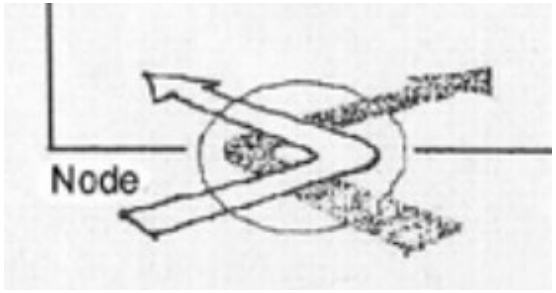


Diagram from Kevin Lynch: Structuring Elements for a City)

Spatial Strategy

The following local nodes in the study area should be prioritised for mixed use intensification based on their high level of accessibility supported by public transportation. :

- Intersection of Alexandra Road and Station Road extension, which becomes an entry point to the industrial triangle and the CHTP (Cape Health Technology Park) development. These areas will require rezoning to mixed use.
- Berkley Road Extension between M5 and Liesbeek Parkway
- Smaller mixed use- residential at Pinelands Station / Oude Molen and Ndabeni Station.
- Intersection of Alexandra and Berkley Road.

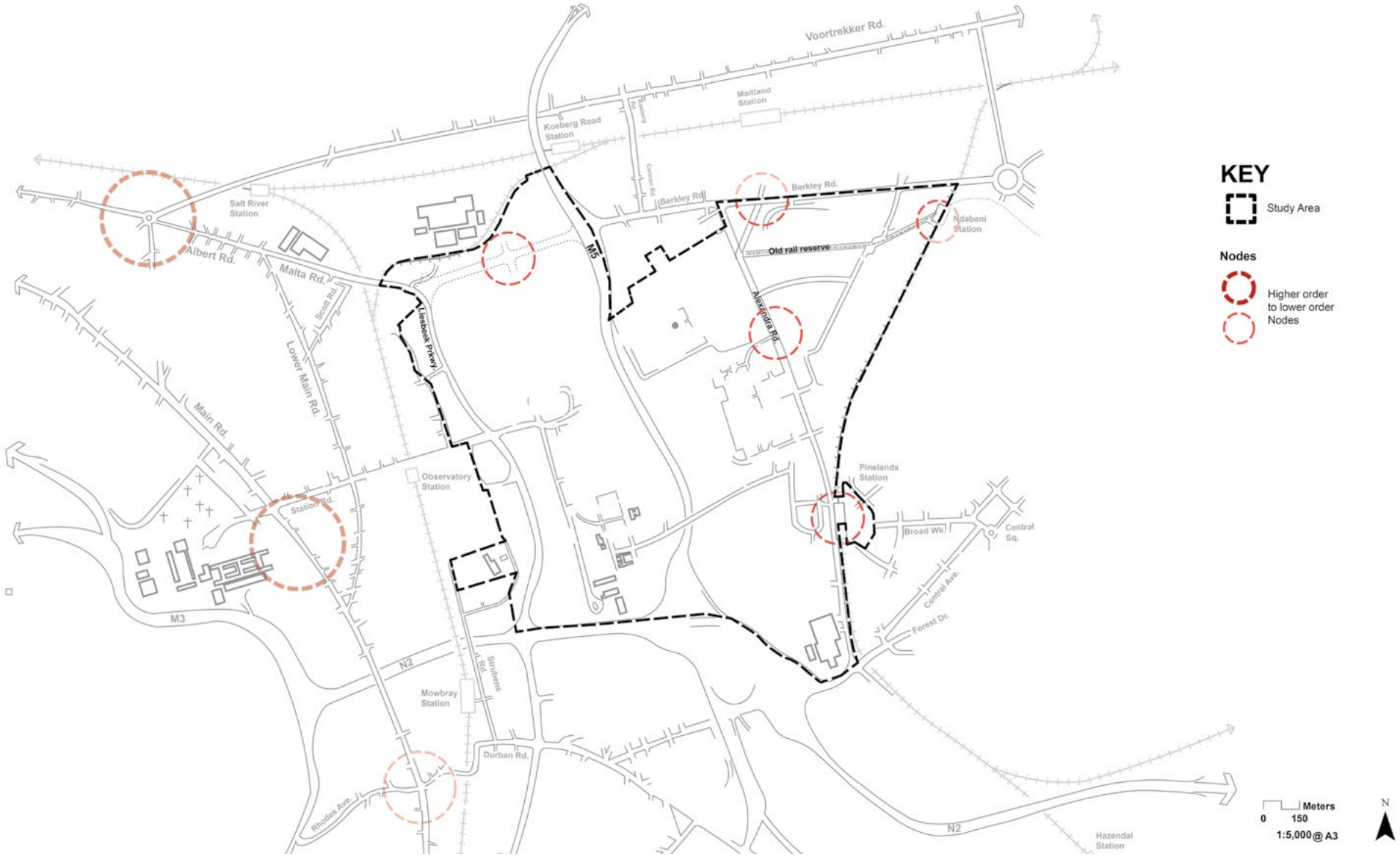


Figure 6.4. Local Nodes

6.6. Activity Streets

Structuring Element : Activity Streets

- Local routes characterised by continuous development, including centres or nodes, mixed land use, linear commercial and business developments, light industry, institutions and social facilities.
- Activity streets are characterised by direct access and interrupted movement flows, especially at bus and taxi stops and traffic lights. These streets represent linkages between nodes and activity areas based on mobility advantages.
- An increased intensity of development will naturally be attracted and should be encouraged along these streets, improving access to opportunities and public transport systems.

Spatial Strategy

- Strengthen east-west linkages between Observatory and Pinelands, Oude Molen and Ndabeni through the development of Berkley Road extension.
- Strengthen north- south activity corridors along Alexandra between Ndabeni and Oude Molen.

Extract from the Table Bay District Plan(2012) showing typical activity streets.

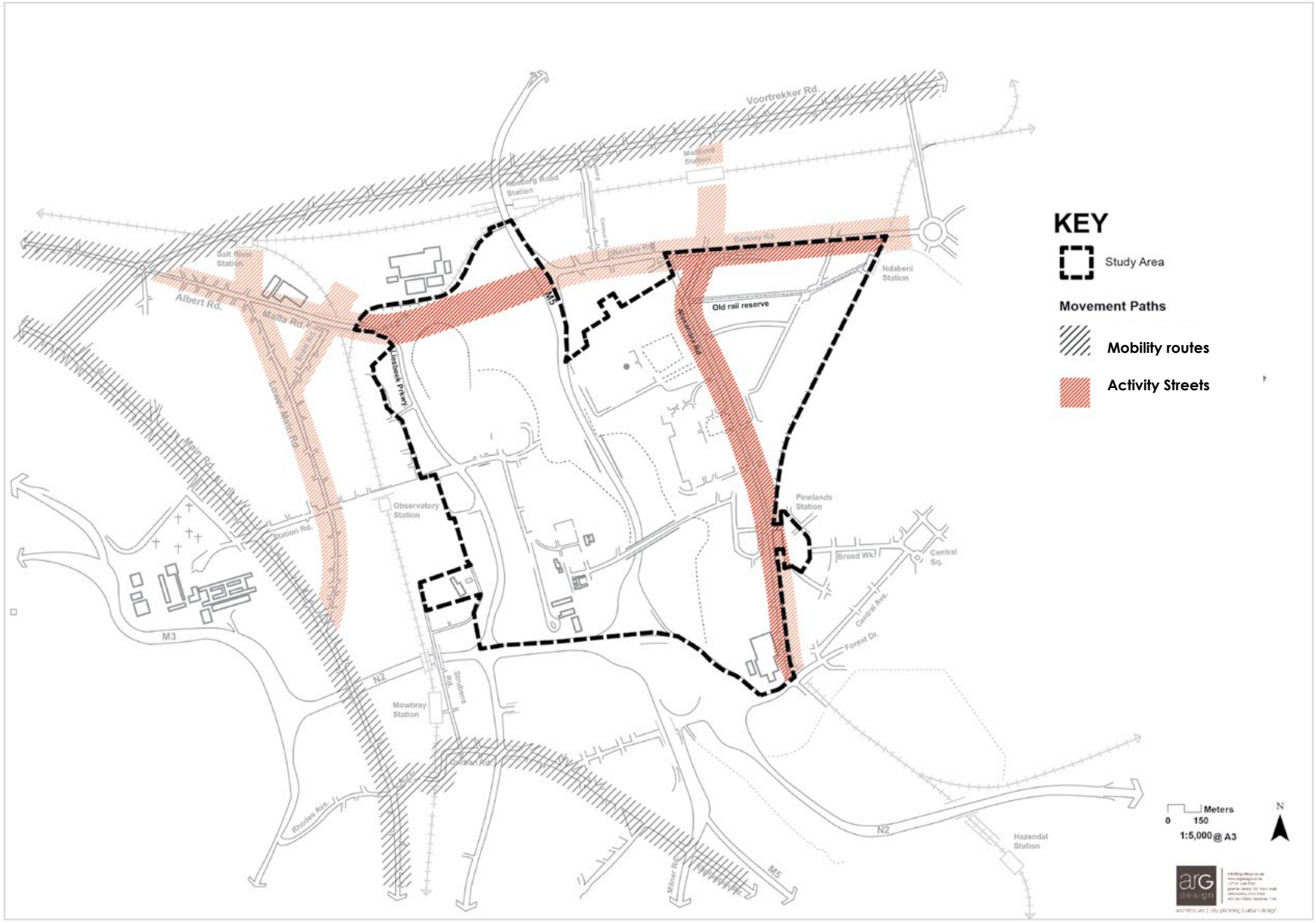


Figure 6.5. Structuring informants: Activity Streets

6.7. Infill and Densification

Structuring Element : Infill and Densification

- Tools to achieve spatial integration, increased population thresholds and more functional use of underdevelopment areas.
- In support of sustainability principles and in support of nodal (TOD)and corridor development concept.
- Mechanisms to achieve spatial integration and increased population thresholds and social inclusion include Social Housing Policy, Urban Integration Zones and Draft Inclusionary Housing Policy, densification Policy (CoCT).

Spatial Strategy

- Densification and higher intensity residential land use within targeted precincts at River Club, Oude Molen, Ndabeni, parts of Maitland Garden Village, parts of Alexandra Institute and the old Bowling Club in Observatory
- Establish the Ndabeni precinct as a mixed use industrially led densification node
- Intensify identified nodes especially TOD nodes around Pinelands Station and along the proposed Berkley Road extension.
- Retain residential character within the Pinelands and Maitland Garden, Garden-Cities/village precinct, except at Pinelands Station Forecourt and possible mixed use opportunities along Alexandra Road to create transit accessible/ well-located residential development.
- Possible Future UDZ along Alexandra Road to encourage redevelopment.

Diagram from CoCT Urban Design Policy: Densification(2013)

Related CoCT Policies

- Cape town Densification Policy, 2012Development Management and Information Guideline
- Series – Booklet 7 Landscape Plans, 2009 Series
- Summary Guidelines and Standards for the Planning of City of Cape Town Social Facilities and Recreational Spaces, 2010
- Tall Building Policy, 2013
- City of Cape Town Urban design Policy,2013

Figure 6.6. Structuring informants : Infill and Densification

6.8. Containment , Continuity and Protection

Structuring Element : Containment and Protection

- Protecting valuable natural, economic and cultural, spiritual heritage resources (both cultural and built).
- Protect wetlands, ecological corridors and habitat and continuity of eco-corridors.
- Includes protection of active open spaces, landscape elements and visual impact.
- Sports facilities form an important part of the active green recreation system.

Spatial Strategy

 Enhance possibilities for cultural and spiritual embodiment and spaces along the river corridors and green network of spaces.

Protect the environmental integrity of identified biodiversity areas along the river corridors and potential. In particular limited access along the Black River.

Protect continuity of ecological corridors and linkages with larger river system.

 Protect the integrity of the Hartleyvale/Malta regional open space system with associated recreational and sports related uses. Public spaces should make up a continuous network of space.

 Maintain integrity of existing public open space throughout the study area.

 Support residential character maintenance in identified areas, with acknowledgement of higher intensity uses along Berkley Road Extension.

 Contain commercial development within identified nodes and nodal boundaries.

 Acknowledge the river corridors (Liesbeek and Black) as strategic land in support of flood mitigation, conservation, NMT support and functional and recreational space.

 Cultural Heritage network as part of continuity and protection

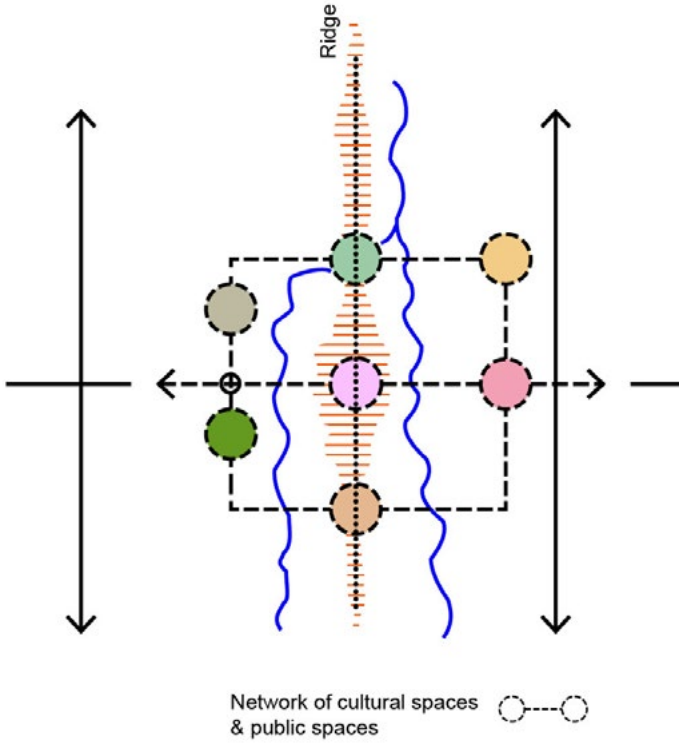


Figure 6.7. Structuring Informant : Containment and Protection

6.9. Strategic Land

Structuring Element: Strategic State Land

- Indicating areas for special growth should be based on agreed principles and direct budget allocation and future priority spending.
- Special growth areas can refer to redevelopment of existing development areas to higher intensities, vacant land suitable for infill development as well as greenfield sites.
- Identification of priority state owned development growth nodes and/or precincts.
- Indicating areas to be prioritised for future intervention for higher intensity land use, land exchange and release.

Spatial Strategy

- Promote intensification, mixed use and residential densification along Alexandra and Berkley Road extension and portions of Station Road extension(within Alexandra Institute) in support of activity routes
- Support redevelopment of state owned land at Oude Molen for mixed use development including residential particular around the Pinelands station.
- Support intensification along Alexandra edge of Alexandria Institute
- Support strategic focus as scientific/industrial hub (CTHP) at Ndabeni.
- Support location of SKA HQ at Observatory Hill and Data centre at Ndabeni
- Consolidate and intensify land uses in City Depots to release underutilised land
- Formalise Sports Node south of Station Road especially on underutilised land

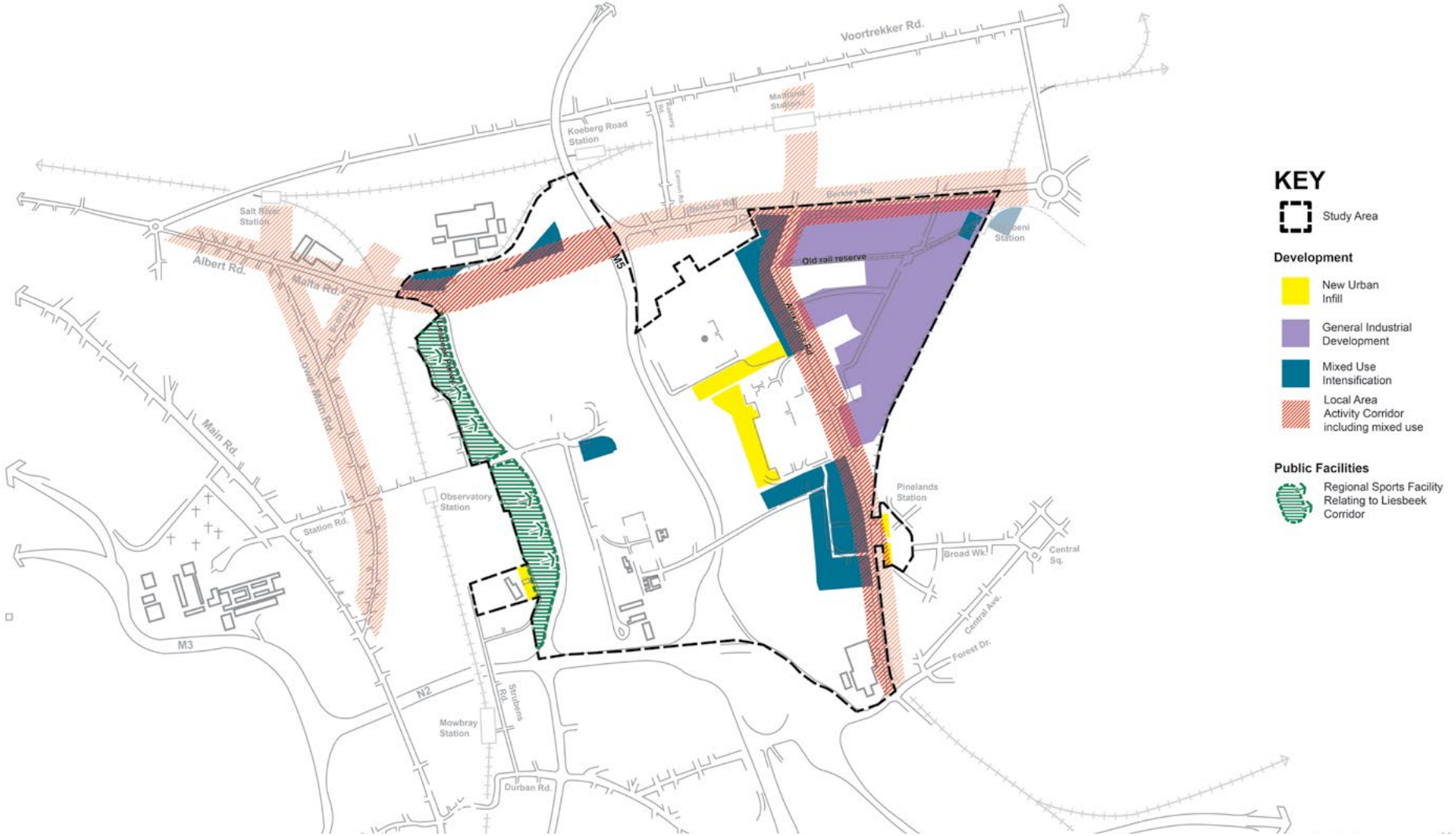


Figure 6.8. Structuring Informant: Strategic State Land

6.10. Movement Network

Structuring element: Proposed Movement Network

There is a strong ordering dimension to movement.

Higher densities increase the viability of public transport and should be encouraged along public transport routes.

Coordinating the stopping points and terminals of different movement modes significantly increases the attractive power of the zones in which they are found. These zones are ideal for high intensity, mixed-use development.

Spatial Strategy

Reinforce missing **east - west links** in the form of Berkley Road extension, Station Road extension(Observatory) PT and a stronger link to Valkenberg and Oude Molen.

Promote NMT along north south routes at Alexandra Road and along the River corridor.

Primary accessibility corridors :

- North south_ Liesbeek Parkway, M5,
- East West_ Liesbeek Road Extension , Station Road extension
- N2
- Internal access linkages between Oude Molen and around Valkenberg Estate.
- Reinforce development around station precincts especially, Pinelands, Ndabeni, Maitland.

Aims

- Better connect the community with the river
- Better access to the river
- Enhance the River Walk
- Address Universal accessibility
- Address safety concerns
- Enhance walking and biking opportunities
- Provide strategic rest areas along river-front
- Improve vehicular connectivity east-west

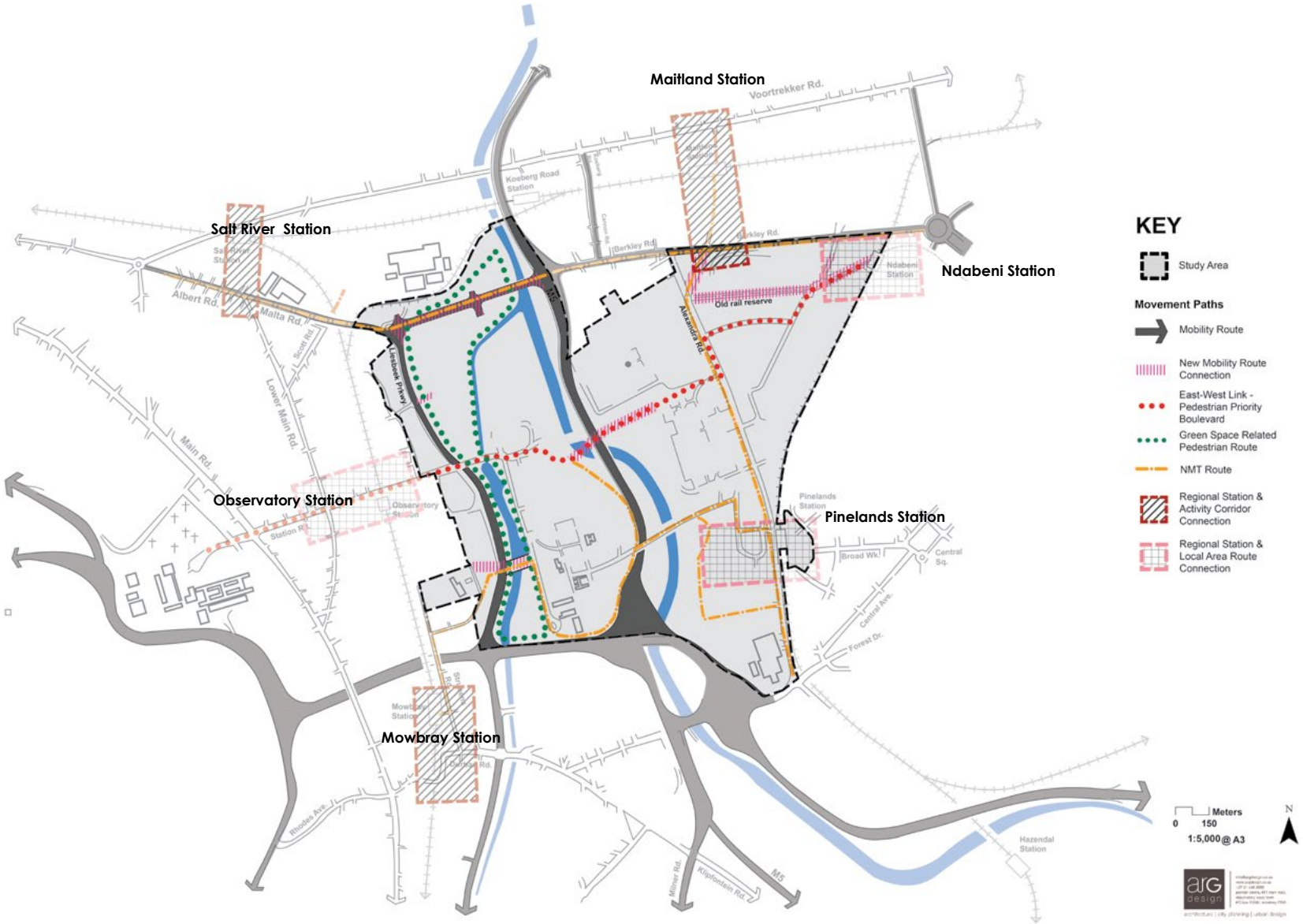


Figure 6.9. Structuring Informant: Movement Network

6.11. The Two Rivers LSDF Spatial Concept and Vision

Vision: Actively intensify the residential, economic, recreational and institutional urban activities by developing limited vacant land and connecting the Mosaic of Precincts at the confluence of two rivers and two urban corridors to:

- Provide more residential units,
- Create more job opportunities,
- Celebrate complex layers of memory, cultural heritage, science and diversity,
- Enhance the structured and Open Space recreational and natural network
- Support healing and environmental resilience and
- Promote spatial integration & urban intensification within an efficient mobility and infrastructure network"

The draft Two Rivers LSDF vision reflects the desired spatial outcome for the area. It has been informed by the specific locational attributes and spatial opportunities in the local area within the context of a spatial vision for the greater municipal area outlined in the MSDF and TOD Strategy. It has also been informed by the First Nation view of the indigenous landscape - a terrace of time - rolling back, and expanding through history, with each successive step down to the next terraced landscape, leading to the indigenous pre-colonial landscape.

It is to be a local area in which locals and visitors can enjoy the River-walk and the natural environment of the eco-corridors while having the opportunity to benefit from continued economic growth and extensive sporting, scientific, health and cultural amenities. It is a local area that contributes towards spatial integration where different people can work, live and relax in a river-front setting; where intense urban environments, institutions and natural areas complement each other. It is an area that acknowledges Its broad range of employment and recreation opportunities is accessible by means of efficient public transport linkages, while well-located affordable residential opportunities are available.

The local area is characterised by quality linear open spaces particularly along the river-front, which includes pedestrian walkways, bicycle paths and integrating the indigenous narrative into the public realm through "formally acknowledging landmarks in pre-colonial history. It includes pedestrian and public transport linkages that tie its diverse precincts together to create a liveable and vibrant part of the city.

Acknowledging the role of this local area in the larger Municipal context and how it needs to contribute to broader, city-wide planning objectives outlined in the MSDF is vital.

The strategic role of the local area in this regard should focus on the following:

The role and function of the site as a confluence area between:

- the MSE-IZ and the Voortrekker Road –IZ ;
- between the Liesbeek River and the Black River and the
- pre-colonial and post colonial history.

The increased intensification within the urban inner core and the role of state owned land in spatial integration;

Enabling access to the local area's economic, leisure, scientific, cultural social and residential opportunities;

Continued enhancement of and better access to the eco-corridors

Informed by the status quo directives, opportunities and constraints, development goals and objectives, structuring informants, a Local Spatial Development Framework for the future development, redevelopment and maintenance of the study area is now presented.

Key urban development concepts have emerged through the strategic

planning process and forms the building blocks for the area and its future function within the greater Metro. Figure 6.10 depicts the spatial vision for Two Rivers LSDF . At the strategic level the idea is to strengthen movement links between Two Rivers local area with the rest of Cape Town. Currently, Two Rivers is isolated by the Liesbeek and Black Rivers which limit east west access between Pinelands and Observatory. This is further reinforced by the railway line (Cape Flats) running in a north south direction and the M5.

The gentle river valleys are ecological corridors that contain some critical biodiversity areas (CBAs) and areas of ecological importance as well as providing amenity value for residents. These should be linked to a NMT green route.

The main interventions are the Berkley Road Extension Activity Street and Alexandra Road Activity Streets ,which will contribute to economic development. In addition, to strengthen and reinforce The Two Rivers transport and NMT network and link with Cape Town CBD and to provide intensification around transport nodes and routes..

Other elements include:

Intensification and infill

- Mixed use intensification areas along Alexandra Road and especially at Oude Molen/Pinelands Station and along the Berkley Road extension and Station Road extension.

Integrated Transport

- Integrated transport system comprising M5, Liesbeek Parkway and Alexandra Rd, from south to north with the latter operating as an activity spine as higher order mobility routes. Link roads comprising Berkley Road extension and Station Road extension east west .and Valkenberg Bridge as the public transport and non-motorised transport spines;
- These NMT and Public Transport routes should be tree covered and landscaped and direct access permitted wherever possible; Liesbeek south of Observatory Road is a good example of this

Open Space /green riverwalk

- The public open space network comprises the river corridors lined with a recreational/NMT route that allows public access to the western bank of the Liesbeek, but limits access to the Black River and; that traverses the River Club site. An active sporting precinct is promoted along the western side of Liesbeek Parkway between Hartleyvale and Malta Road. Celebration of cultural heritage and the changes over time to be incorporated into design. A variety of open space options can accommodate a variety of recreational needs. The green open space alongside the Liesbeek River-walk will allow for the 'Coast to Coast Green-way', a green corridor linking Rietvlei in the north to Rondevlei in the south.

Figure 6.10. Spatial Development Framework Diagram Concept .

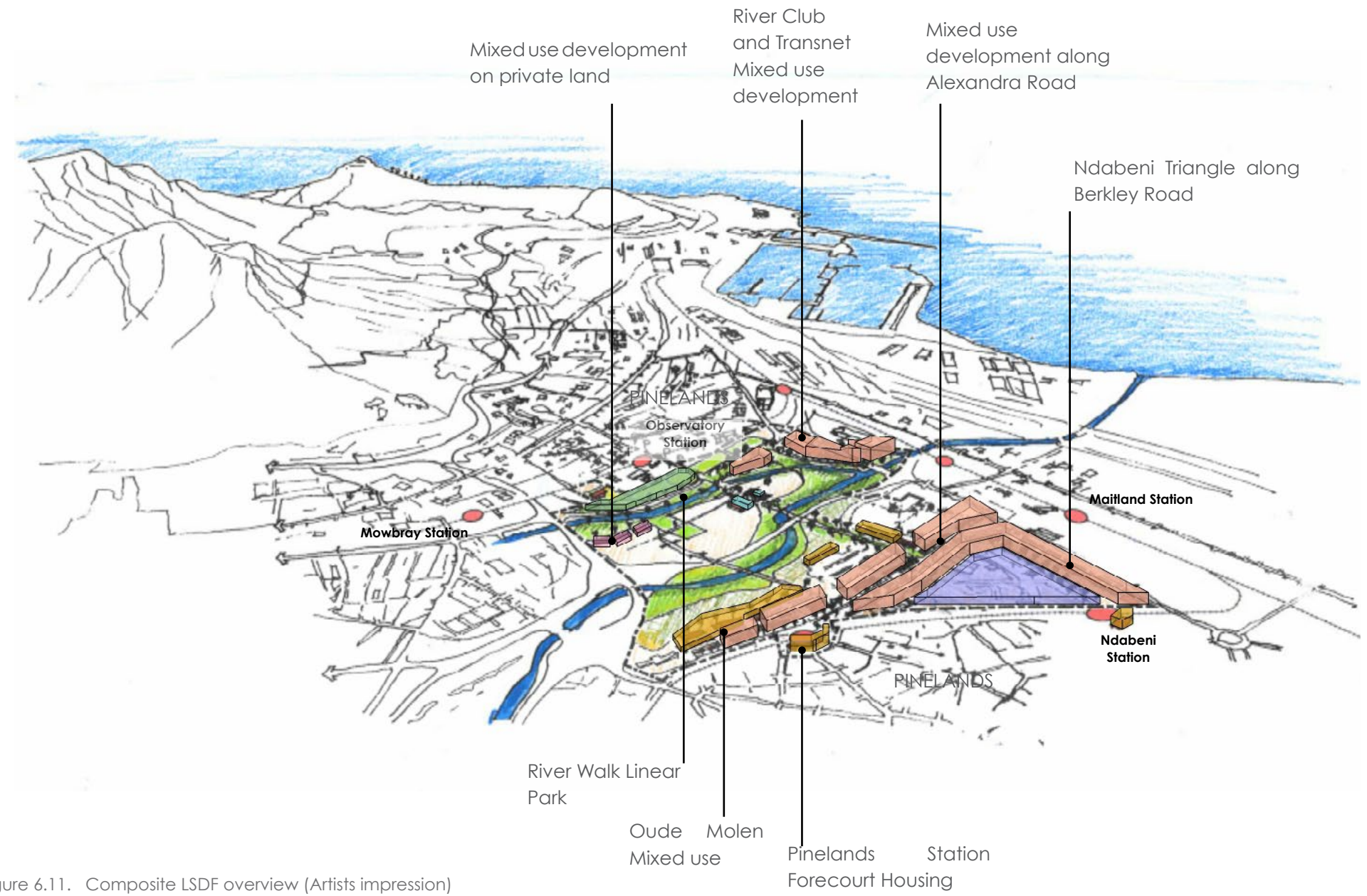


Figure 6.11. Composite LSDF overview (Artists impression)

Figure 6.12. Passive and Active Recreation Plan

Passive and Active Recreation plan

The river corridors are quite different in nature. The edge treatment relates to the level of public access and interaction.

Three levels of interaction are proposed in connection with the river corridors.
Active walking corridor/connection that is publicly accessible and consist of formal walking paths/cycle routes
Passive recreational spaces: picnic areas. Areas for spiritual activities and ritual.

7. Supporting Policies & Spatial Principles

This section of the report outlines the broad development principles for the local area plan. Each of these principles have resulted in a number of proposed spatial strategies and spatial interventions proposed per precinct. (These are illustrated in section 10 in more detail.

The broad development principles have been formulated through taking the following into account;

7.1. Guiding Design Principles

P1 Promote integration and inclusiveness
P2 Conserve, protect and enhance natural and heritage assets
P3 Maximise the development and economic opportunities
P4 Creating a clear urban structure through place making
P5 Encourage a compact urban form through residential densification and transport network upgrades and transit oriented land uses
P6 Promote highest and best use of strategic state landholdings.

a. MSDF principles

- "Access to opportunities for people" To achieve this, the City's focus is on inward growth and investment to support infrastructure in support of dense, diverse and transit oriented land uses.
- Spatial strategy 1: Building an inclusive, integrated, vibrant city
- Spatial Strategy 2: Manage urban growth, and create a balance between urban development and environmental protection
- Spatial Strategy 3: Plan for employment, and improve access to economic opportunities

(b) the SPLUMA development principles applicable to spatial planning

- Spatial Justice - undoing apartheid spatial patterns to insure inclusiveness to all,
- Spatial Sustainability - limiting urban sprawl and it must consider all costs (current and future) to all parties for the provisioning of infrastructure and social services,
- Efficiency - optimal use of existing resources and infrastructure,
- Spatial Resilience - spatial plans should have an inbuilt flexibility and robustness,
- Good administration - to include transparent public participation processes.

(c) as well as the comments and issues raised by the public and authorities during the various stakeholder engagements (See appendix) thus far.

Each of these principles and associated spatial strategies are described in detail in this section.

P1. Promote integration and inclusiveness

- Improve movement routes to and around the study area.
- Promote and identify areas of affordable housing
- Improve integration between precincts and user groups
- Create a system of NMT routes and public spaces that promote public access without compromising environmental functioning.

P2 Conserve, protect and enhance natural and heritage assets

- Enhance public access and or awareness of heritage buildings, landscapes
- Protect and conserve wetlands, faunal and avifaunal habitat where possible and appropriate along river corridors.
- Enhance, acknowledge and celebrate the layers of history and memory associated with the landscape. Memorialisation and acknowledgement of the history of exclusion in particular for the First Nation.
- The rivers have been identified as a critical component of the work and as such, understanding how best to manage flooding and develop within a dynamic natural environment whilst also improving water quality within a spatial framework,

- Integrated river management : river edge (riparian buffers)
- Ecology restoration
- Flood mitigation and integrated management

P3 Maximise the development and economic opportunities

- Study area is a strategic part of the City, that is well located within the larger transport and economic network.
- Maximising economic opportunities can also be achieved through unlocking underutilized state land for development.
- As large parts of the site are state owned, it can provide an opportunity to create jobs and other economic opportunities related to scientific endeavour and health as well as for affordable housing opportunities and community facilities..
- The opportunities created through intensification of use also allow for associated commercial and retail opportunities especially in the River Club site and along Alexandra Road.
- Co-ordinate spatial planning efforts with infrastructure investment. I.e. as Athlone WWTW is upgraded allow for intensification of use in Study area.

P4 Creating a clear urban structure through place making

Key to a town's image: paths, edges, districts, nodes and landmarks

This would entail:

- Connecting key landmarks and nodes through a system of movement routes (paths),
- Acknowledging the cultural heritage potential of the local landmarks and maximising the educational and access opportunities around these (nodes),
- Promoting appropriate open spaces as active spaces(nodes) and places of social interaction rather than sterile areas,
- Celebrate some of the edges (such as the western Liesbeek River Bank by promoting public access to it (i.e. NMT route) albeit on private land.

P5 Encourage a compact urban form through residential densification and transport network upgrades and transit oriented land uses

Appropriate densification is thus strategic (where) and supported by a good transport and infrastructure system (how) and within close proximity to social amenities.

The LSDF promotes the concentration of higher residential densities:

- Higher order roads (Alexandra Road, Berkley Road, that support the public transport system.
- Adjacent to and around Public Transport stations (in particular Pinelands Station, Ndabeni and Observatory Station)
- On the periphery of open spaces to increase surveillance(Oude Molen),
- Within areas of concentrated public-sector investments(Berkley Road), and
- In selected areas of high private sector investment(Oude Molen and River Club)

Densification efforts therefore include;

- Mixed use development along Alexandra Road
- The River Club development located at the intersection of Berkley Road Extension and Liesbeek Parkway.
- Transnet site in the new Berkley Road Extension.
- Transit Oriented Development around the Pinelands Station including social housing and some housing and retail and around Ndabeni Station.
- Additional affordable housing adjacent to Maitland Garden Village..

P6 Promote highest and best use of strategic state landholdings (spatial efficiency).

- Reorganising Valkenberg- more compact footprint (Relocating Valkenberg Forensic Facility into main Valkenberg Estate)
- Infill and reorganization of Oude Molen to promote economic development and mixed use.
- Reorganising Alexandra Institute – into a more compact urban form through moving educational facilities away from Alexandra Road and better utilization of Alexandra Road edge for mixed use including some residential opportunities.
- "Spatial Resilience"- flexibility in spatial plans is accommodated to ensure

sustainable livelihoods.

- Allow for incremental growth over time as circumstances, technologies change.
- Climate change adaptation - as technologies change, precinct to move towards green infrastructure and sustainable resource use.

7.2. Development Directives

Two Rivers' biophysical assets in particular the river corridors and associated wetlands are identified as structuring elements for containment and protection of the existing and future urban form in the previous sections.

SPLUMA, NEMA, the NHRA and the City's Environmental Strategy collectively provide a basis to protect and enhance the city's biophysical and social and aesthetic assets in order to sustain the economy, create liveable urban environments and build resilience.

The following development directives (Table 71) based on environmental, risk and social factors are likely to impact on the development potential of sites and may trigger additional legislative processes.

Accordingly, the following spatial and policy aspects should be considered in early deliberations of development proposals and in the assessment of proposals irrespective of the conceptual designations outlined in Map 7.1:

- Protected areas, wetlands;
- Areas of risk –safety zones / flood;
- Cultural and built heritage resources and aesthetic, social assets (e.g. public sports grounds, public open space, cultural/spiritual places).

In assessing a proposal / application within the context of these development directives, the applicant and/ or assessor will demonstrate that cognisance has been given to adopted environmental management instruments and to the protection of biodiversity resources and intangible and tangible heritage assets.

The final determination of proposals will be informed by the outcome of the legal / technical process (associated with a standard operating procedure).

Table 7.1 Directives

ENVIRONMENTAL SUB THEME	LAWS / POLICY	AUTHORITY	PRINCIPLE THAT APPLIES WHEN CONSIDERING DEVELOPMENTAL RIGHTS	EXCEPTIONS
Biodiversity sensitivity (Map	NEMA	DEA&DP: WCG	As a general guideline, where the protected areas have been accurately delineated to protect natural resources development should not be considered. (I.e. agreements between Cape Nature and CoCT Environmental)	
RISK SUB THEME				
Flood plains	Floodplain and River Corridor Management Policy Management of Urban Storm-water Impacts Policy, 2009	CoCT Water and Sanitation, DWA	Careful management of development to Minimize development that will increase flood risk, To protect the environmental integrity of Aquatic resources and to ensure that permitted development enhances the aesthetics and character of the adjacent river corridors watercourses / wetlands.	Mitigation upstream to prevent downstream flooding.
Infrastructure Capacity	Water Demand Management Policy, 2001 Electricity Supply amendment bylaw.	**CoCT**	Development cannot be approved without absolute clarity of both the CAPEX and OPEX, which will be passed on to the developer.	
HERITAGE, AESTHETIC AND SOCIAL SUB THEME				
Heritage Protection Areas and areas of cultural significance	NHRA (25/99)	COCT Heritage Western Cape SAHRA UN	Protection, enhancement and celebration of intangible and tangible heritage. Assessment of development in terms of the principles and HRDI established in the Phase 1 HIA for the overall site and additional heritage assessments developed at the precinct level.	

General Principles for Water Sensitive Urban Design within the Two Rivers LSDF.

The development along the river corridors requires an adaptive, integrated, collaborative ecosystem-management approach.

Green Infrastructure

Green infrastructure is a cost-effective, resilient approach to managing storm water that reduces and treats storm water closer to its source, while delivering environmental, social, and economic benefits. The following principles must be applied to developments within the LSDF.

Principles

The underlying principles are as follows:
» Treat water as close to the source as possible, » integrate natural approaches into the design of streets, sites, and communities » create green buffers around bodies of water where storm water is released.

PURPOSE During rainfall events, water hits the surface of the earth , it should therefore be made to filter through the ground via permeable surfaces that are vegetated--as in natural, or undeveloped areas--or allow infiltration, such as permeable pavers. In this case, surface water velocity is slowed, and groundwater sources are recharged. Green infrastructure uses vegetation, soils, and other design elements to mimic the performance of natural, vegetated areas to restore the natural processes required to manage storm water and create healthy urban environments.

Small sites: » Permeable Pavers allow storm-water runoff to infiltrate the hard surface pavement and enter the soil, removing fine grain pollutants and providing erosion control. » Rain Gardens Also known as bioretention or bio-infiltration, these are shallow, vegetated basins that collect and absorb runoff, and planted with indigenous, drought- and flood-tolerant species.

Large sites:
» Detention Ponds Hold storm water until pollutants settle to the bottom. The water is then released slowly into the river, reducing flooding and pollution in the rest of the system.
» Water Quality Inlets Filter sediments, oils, and greases from parking lots prior to discharge into the storm drain or infiltration basin.
» Infiltration Basins Capture storm water and store it until some, or all, of the storm water filters into the surrounding soil.
» Green Parking Areas Integrate filtration, plants, and paving into parking areas design to manage storm water and enhance pedestrian experience.

Street design:
» Bioswales
Vegetated channels that provide treatment and retention as water is moved from one place to another.
» Urban Tree Canopy
Trees can reduce and slow storm water by intercepting precipitation with their leaves and branches.
» Planter Boxes
Rain gardens that are designed within the urban street-scape in mind. Planter boxes often have curb inlets and overflow into the storm sewer drain.
» Green Streets/Alleys
Integrated filtration, vegetation, paving and curb design to address storm water and enhance the pedestrian experience.

Floodplain: A registered Engineering Professional must be engaged by developers to satisfactorily demonstrate and certify that:
• The activity / development will not materially increase flood hazards for other property owners or adversely affect flood behaviour or the stability of river channels.
• Any structure can withstand the forces and effects of flowing flood-waters, including scour of foundations, debris forces and buoyancy forces.

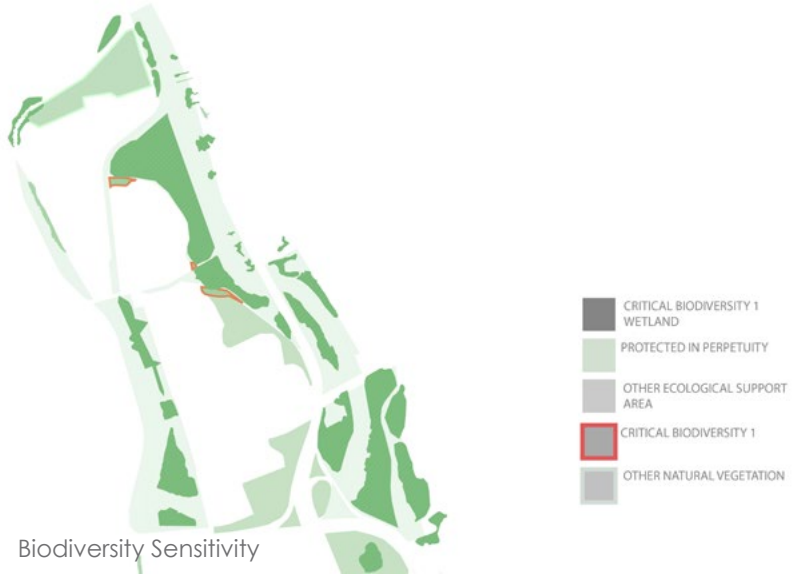


Figure 7.1. Biodiversity Sensitivity

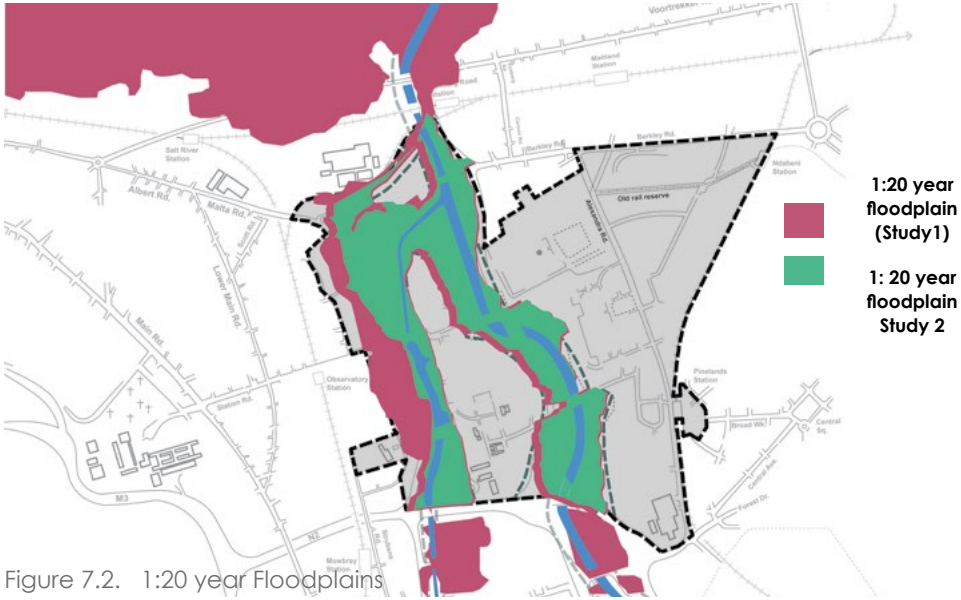
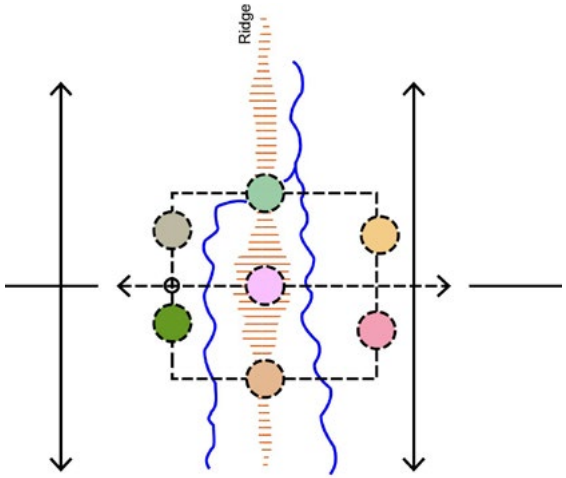


Figure 7.2. 1:20 year Floodplains



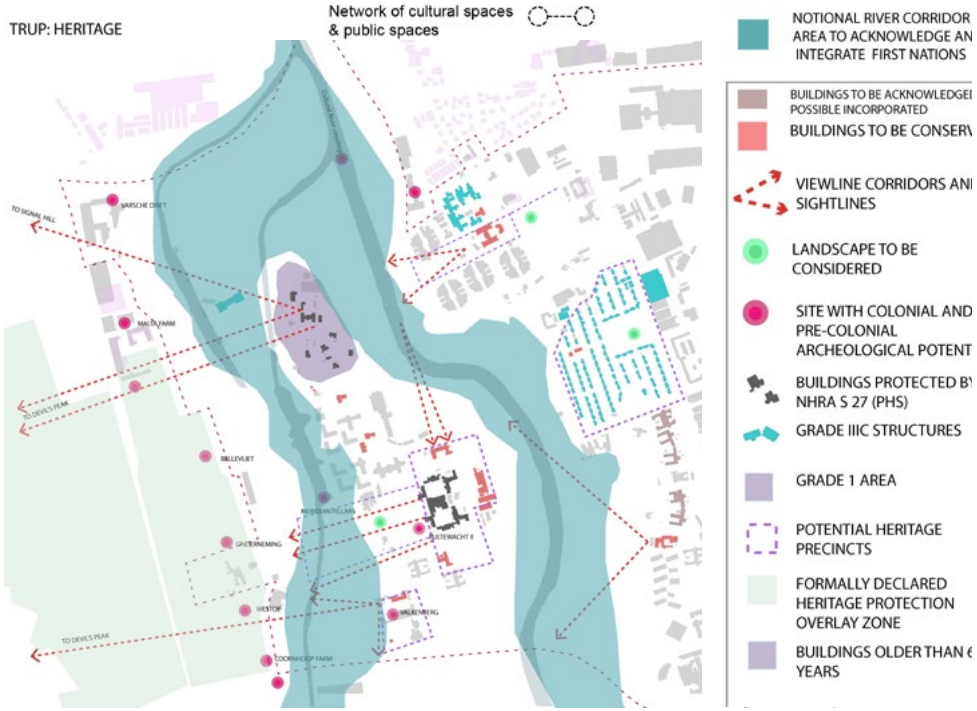


Figure 7.3. Heritage

8. Precincts

Detailed proposals for individual precincts are reflected in this chapter

There are eight precincts with the larger study area, each with their own distinctive characteristics, and often with specific interest groups. Some of the precincts interact with each other, while others do not due to barriers such as freeways and fences. There is approximately only 471 000m² of floor area within the study area site, and coverage is extremely low. The potential for accommodating much more floor area within the precinct is high and should be promoted in balance with natural areas, institutions, good public transport, NMT and adequate service infrastructure.

8.1. Logic for the precinct delineation

The Precinct plans apply to specific areas within the development framework that have common features, relationships or phasing requirements. The Precinct Pion describes in more detail the development objectives and intentions for the specific area in the development as well as principles for urban form, land-use, pedestrian links, traffic movement, floor space and environmental management.

Precinct A: The Liesbeek River Corridor and River Club
Precinct B: Valkenberg Estate & SAAO
Precinct C: Sports-fields
Precinct D Oude Molen/ Pinelands Station
Precinct E: Maitland Garden Village
Precinct :F Alexandra Institute
Precinct G: Berkley Road Industrial Triangle.
Precinct H: Black River Corridor

Precinct A: Is a precinct on its own as it includes the entire Liesbeek River corridor, which should be administered and treated as one precinct to protect the ecological integrity.

Precinct B: Includes the Valkenberg Estate and the adjacent Protea Hotel and Chinese School. The location of these land uses on the hill and between the two river corridors, provides for similar management guideline.

Precinct C: Includes all of the sport-fields located to the west of Liesbeek parkway, which together form a separate sporting precinct and green corridor.

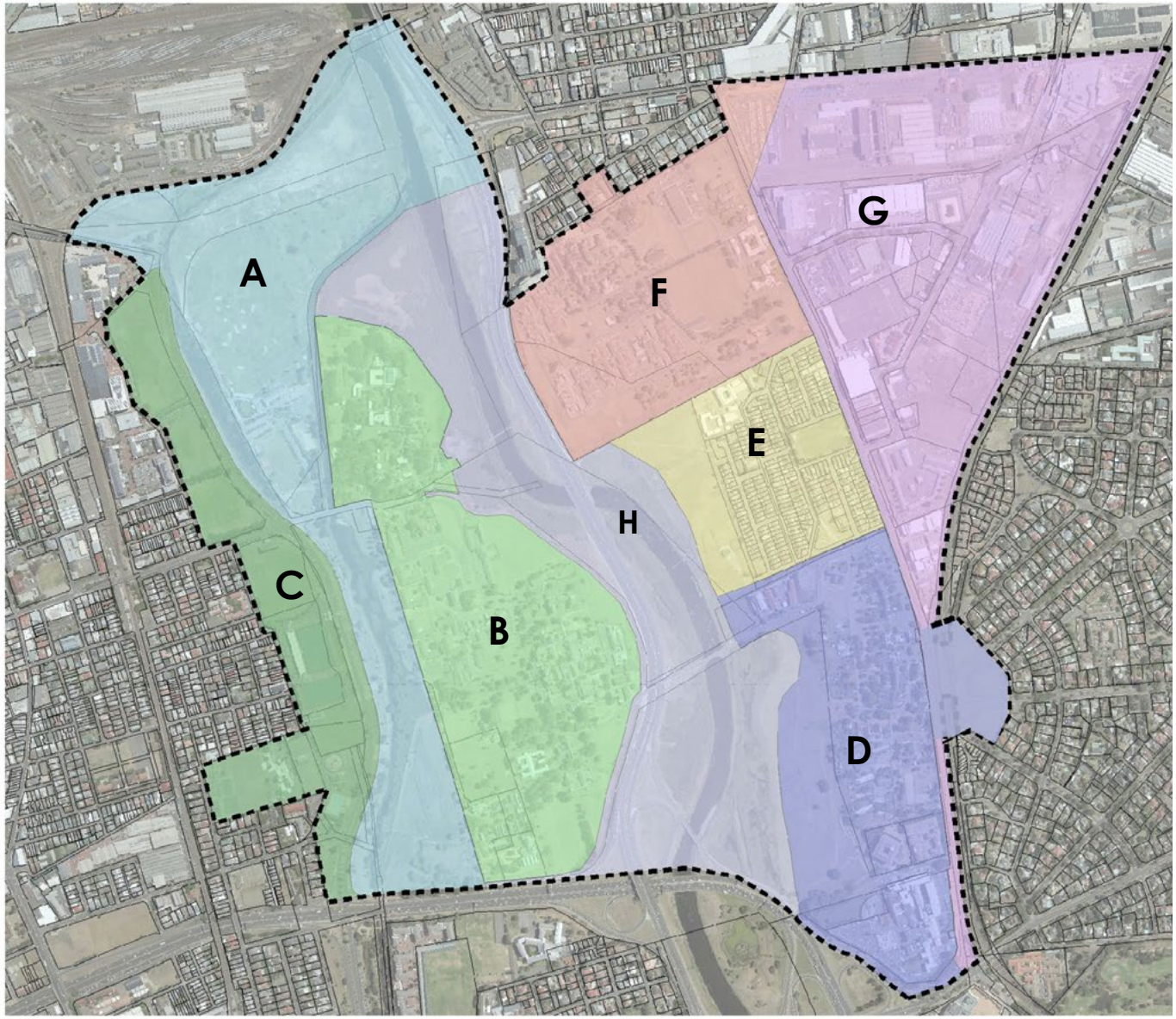
Precinct D: is the old Oude Molen Estate which provides an opportunity for redevelopment for mixed use as well as the Pinelands Station Forecourt. This small precinct encourages TOD principles around the station forecourt.

Precinct E encompasses the old Valkenberg Hospital Estate that used to house the "Black" wards.

Precinct F: Maitland Garden Village incorporates this Garden Village located between Alexandra Road and the M5.

Precinct G: Alexandra Institute is a fenced off institute which provides facilities for people with intellectual disabilities. However, land on Alexandra Rd and future Station Road extension can be developed

Precinct H: Black River Corridor incorporates many ecologically sensitive areas.



KEY

Precinct A: The Liesbeek River Corridor and River Club

Precinct B: Valkenberg Estate & SAAO

Precinct C: Sports-fields

Precinct D Oude Molen/ Pinelands Station

Precinct E: Maitland Garden Village

Precinct :F Alexandra Institute

Precinct G: Ndabeni/Berkley Road Industrial Triangle.

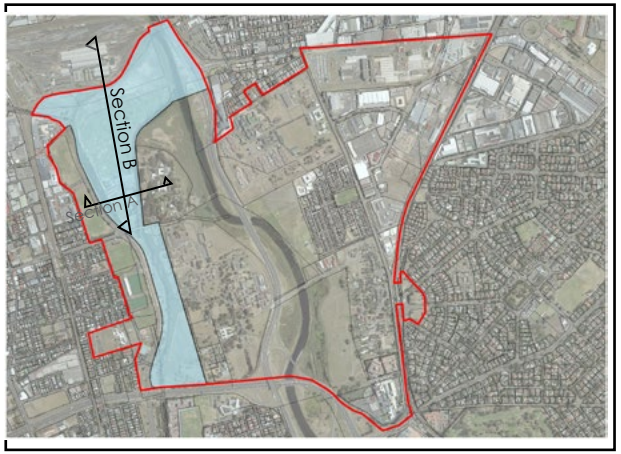
Precinct H: Black River Corridor

Figure 8.1. Precincts within the LSDF

8.2. Precinct A: Liesbeek River Corridor

Vision: Enhancing the Liesbeek River linear park amenity to become a safe, green, well-maintained public space through responsible development and management.

Locality Plan



Precinct A is located along the Liesbeek corridor and includes the River Club and Transnet land.

Current form of river (see photographs)

Principles /Goals

- Protect river corridor
- Encourage NMT along eastern bank
- Emulate natural form on bank
- Protect faunal links
- Provide cultural heritage opportunities
- Support TOD by developing non sensitive areas.
- Vibrant, amenable and walk-able physical environment (mixed/ dense development)
- Improve water quality, create habitat, and reduce flood impacts.
- Any new development should contribute to creating usable and memorable public places. The historic identity gives character. Mixed-use is a priority. Public access is a prerequisite.

Desired Character

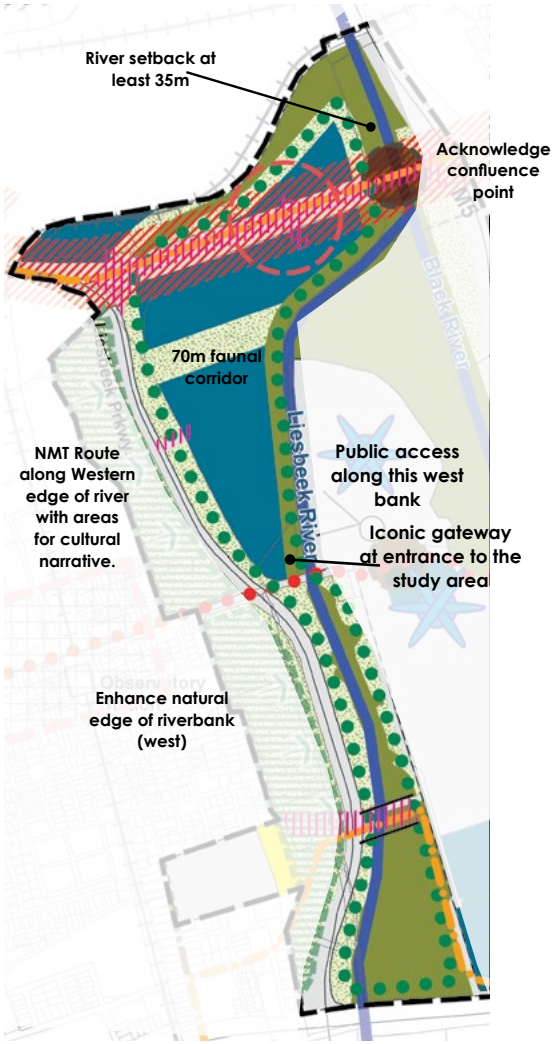
The concrete channel on the River Club side to have a more natural cross section, that encourages an NMT path. Also explore the possibility for a more natural configuration on the Observatory side i.e. gabions .

Historical western river course:-Allows for NMT route and can be converted to a swale. Allows for acknowledgment of significant heritage informants along NMT route.

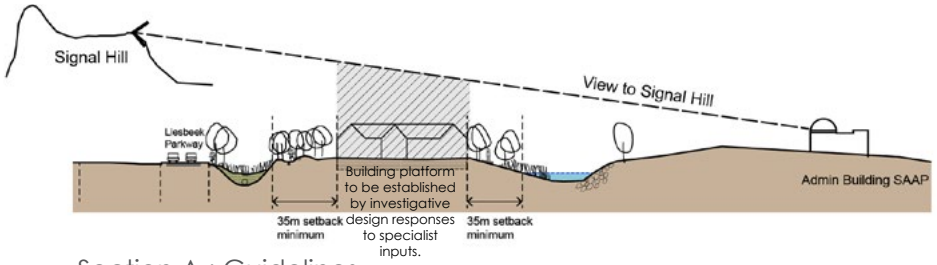
River club- High density mixed used development which includes inclusionary housing. Higher density along both sides of Berkley Road extension to encourage activity route.

N2 to Station Road extension: It is proposed to enhance the western and eastern edge of the river corridor for NMT and enhance through the provision of special places for cultural /spiritual and amenity value through landscaping and providing access.

Concept Plan

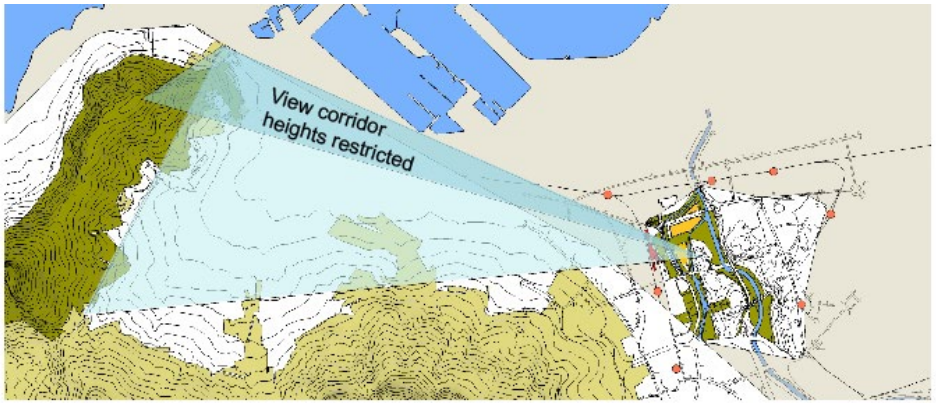


Detailed Plans and Sections



Section A : Guidelines

Iconic gateway to be provided at southern entrance (Example Arch for the Arch , Company Gardens)



Land Use

Inclusionary housing component :

At least 40% of the land use of the developable portion should be residential. At least 20% of the residential housing GLA for this precinct development should be social housing.

Guidelines

The development should have a positive impact on the Liesbeek River Corridor and promote NMT access to the River. The development should rehabilitate the southern bank of the Canal. It should also facilitate a Swale along the western historical course of the Liesbeek River , which will allow for a an NMT route. Developers are required to provide recreation and beautification plan for river corridor. Public access is critical.

• Views towards Table Bay from SAAO must be respected by limiting heights of buildings in the view corridor between the SAAO Main office and Table Bay. Investigations to be done to determine traffic calming measures internal to the River Club site such as creating a dog leg vs. diagonal route through the site. Iconic gateway to be created at southern entrance to the linear park.

Setbacks from water edge: Any development should be more than 35m from the waters edge. Use of zoning and or overlay zone for protection.

Any work to stabilize river edge should be designed to meet corridor goals to improve water quality, create habitat, and reduce flood impacts. Similarly, any improvements to increase public river access should incorporate best practices in riparian edge stabilization.

All of the river Club site is within the 1: 100 year floodplain level . Building platform to be established by investigative design responses to specialist inputs.

Minimisation of visual impact of infrastructure across the ecological corridor to be motivated with a high design quality with landscape and architectural inputs.

At least 40% of the site should remain publicly accessible space.

- Faunal corridor (70m wide) through the centre of the development to allow for faunal movement. Additional buffer of 10m on the north and south of the River Club precinct.
- Access to the precinct- three access points are proposed for the site . From Berkley Road, Liesbeek parkway and off Station Road through the NRF land.

Related policies

Storm-water Management Planning and Design Guidelines for New Developments (2002)

COCT & Catchment, Storm-water and River Management Strategy: 2002 –2007 (May 2002)

Figure 8.3. Collage of precedent images for a river-walk/park

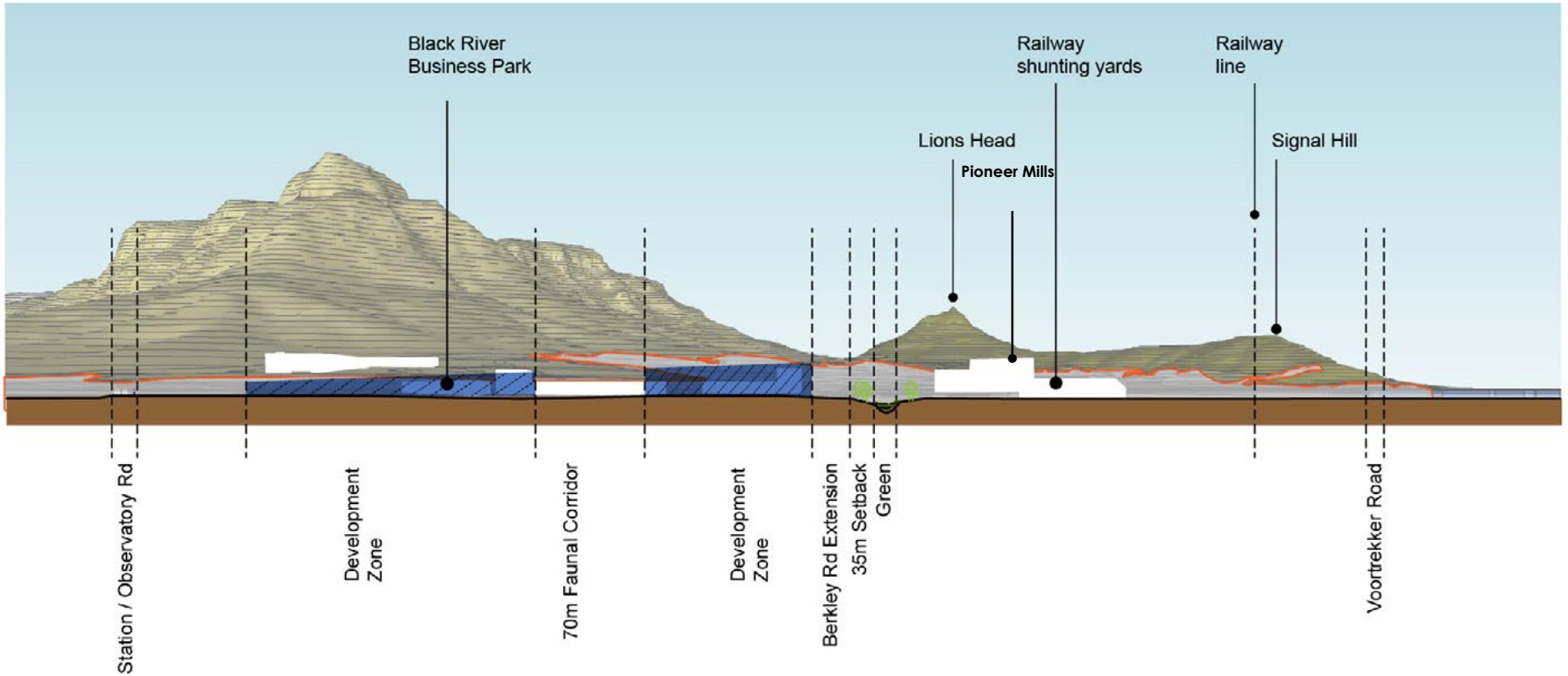


Figure 8.2. Cross section B through Precinct A from Observatory Road through to Voortrekker Road, showing existing buildings in white and height guidelines in blue hatch.

Figure 8.4. Artists impression of Berkley Road Activity Street from M5.

Pedestrian friendly treatment of road bridges example)

Figure 8.5. Artists impression of the River-walk Park.

8.3. Precinct B SAAO and Valkenberg Estate

"The spirit is in the air. When you dance it comes down to you. When it gets into you, you can see it as a string of light. The light carries you in the dance. It can take you to another person who needs healing or it can carry you to another village in the sky. The light is num [n/om]. It doesn't have another name than num. Xixae Dxao (Keeney2003: 41)."

Vision: Celebrating our relationship with the stars through the ages. SAAO, SKA and plaza incorporating First Nation Cosmology.

Locality Plan

Precinct B is located between the Liesbeek Canal and the Black River Corridor and is mainly institutional in character. It includes Valkenberg Estate the SAAO and Protea Hotel.

Current Valkenberg Master-plan

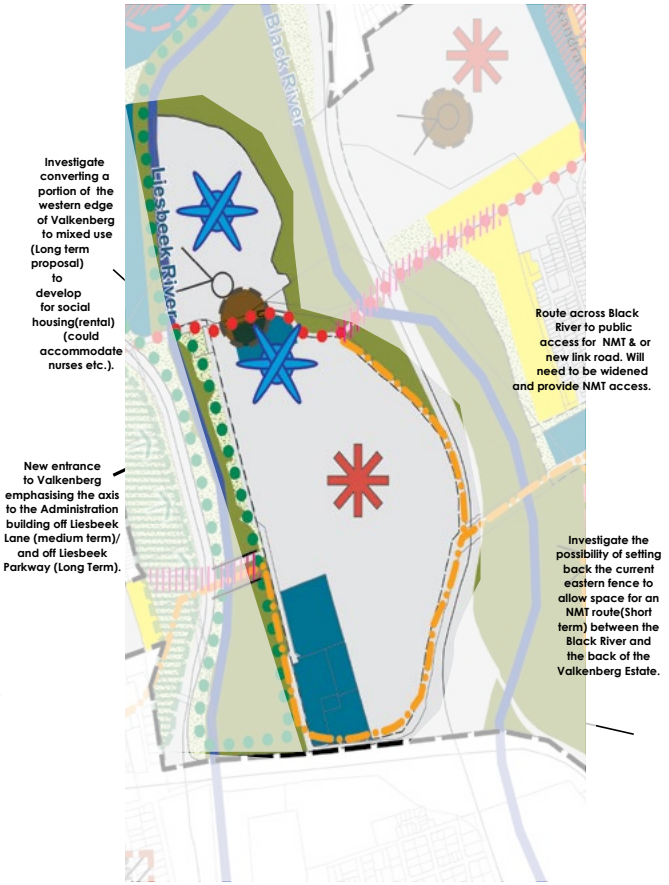
Principles /Goals

- Maintain institutional precinct character
- Preserve and protect heritage buildings and estate character.
- Preserve important heritage views where applicable.
- Maintain the strong visual link from Main Admin building in Valkenberg to Mountain.
- Create better public interface between and to institutions
- The scale and massing of new development must respect heritage buildings when adjacent.
- Support institutional character with auxiliary uses (i.e. accommodation for staff.)
- Fencing and walling to be visually permeable
- Fencing and walling must be strictly controlled

Desired character

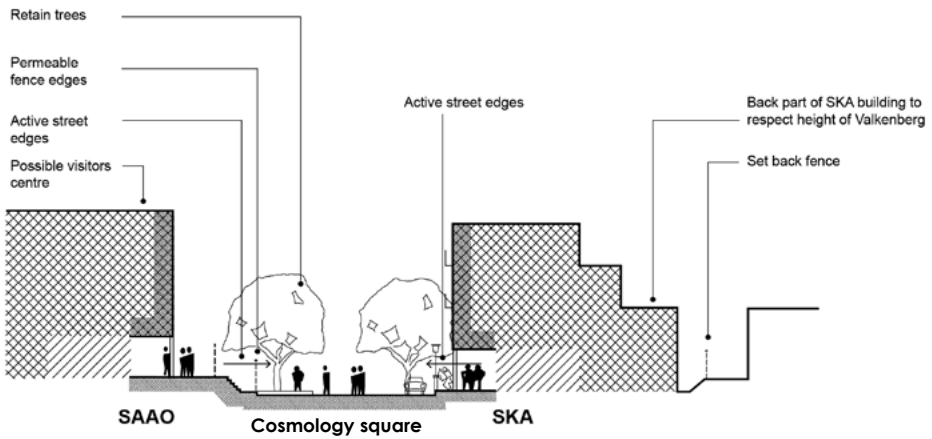
The character is predominantly institutional in character. A number of buildings within the precinct are heritage graded . The landmark buildings, including specifically the Valkenberg Administration building and the access/view corridor to the south of this building. These should remain protected and become more visible. The character of the Valkenberg Estate will largely remain the same in line with the existing Development Framework approved for this precinct. The entire SAAO precinct is a Grade 1 Heritage

The Valkenberg Psychiatric Hospital being, a specialised Hospital requires an enclosed, fenced off area with security. Therefore no public access can be admitted through the hospital grounds. The nature of hospital requires low density , courtyard type configurations of buildings to best treat patients. The hospital will remain space extensive. In its current form the hospital is unable to integrate with the surrounding developments or engage with the river landscape due to the need for security. Buildings not to exceed 3 storeys or 15m in height

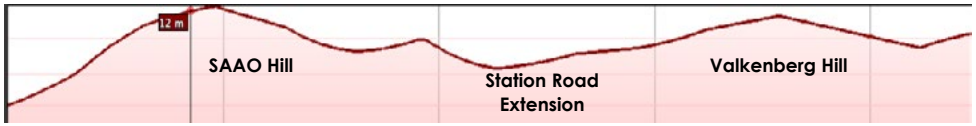


Detailed plans and sections

The Nyae Nyae !Kung Bushmen saw the sky as the dwelling place of all the divine beings and spirits of the dead



Concept diagram



Long Section through SAAO and Valkenberg.

Erf	Owner	Zoning	Description
26439-RE	WCG: Health	Community 2	Valkenberg Estate
160695	Church of the Latter Day Saints	Community 1	Church
160696	Private	Community 1	Chinese Community Hall and School
148700-RE	UCT	Community 1	
118877	WCG	General Business 1	Leased to Protea Hotel: Wild Fig

Guidelines

Heritage

The view corridor /view-cone from the Valkenberg Main Administration building towards Table Mountain, to be maintained. Heritage graded buildings and Valkenberg sites of archaeological importance to be protected.

SKA site:

The current DF for the Valkenberg Site has allowed some space north of the precinct for possible future expansion. This offers an opportunity for a reconfiguration of this northern boundary to allow the SKA development to occupy this space on the hill. Buildings not to exceed 3 storeys or 15m in height

Fence-line adjustment

In addition, the DF allows the fence-line against the Black River edge to be tightened around the precinct offering space for a vehicular or pedestrian/ NMt route along the edge of the precinct.

Long term direct access road off Liesbeek

Land Use

- Reconfiguration of the boundary with the SAAO to allow for a new SKA campus (Medium term proposal).
- Investigate the possibility of setting back the current eastern fence to allow space for an NMT route(Short term) between the Black River and the back of the Valkenberg Estate.
- Route across Black River to public access for NMT & or new link road. Will need to be widened and provide NMT access.
- Station/Observatory Road extension critical connection and creates high potential public space on hilltop as link between SAAO and future SKA HQ

Related policies

Valkenberg Development Framework

Artists impression of plaza: Cosmology square on the hill between the SKA and SAAO.

8.4. Precinct C: Sports-fields

Vision:

Active regional formal sports zone (southern portion) with an active informal recreational / sports zone to the north.

Locality Plan

North Malta Park(Area from Malta Park to Hartleyvale Bowling Club). :four sports fields, two facilities containing ablutions / change rooms / club houses and mast lighting. Activities include Summer playing fields, Winter playing fields, Change rooms,Ablution amenities, Floodlights in the northern section. Access is free.

South Hartleyvale: sports fields and facilities for local clubs, Hartleyvale Hockey Stadium, the Observatory Municipal Swimming Pool and the old Hartleyvale Bowling Club. The Mary Kihn School for Partially Hearing Children -fenced areas with limited public access for informal leisure activities.

Principles /Goals

Regional Sports/recreational Character to be maintained

- Intensification as regional facilities will be promoted.

Fencing and walling to be visually permeable

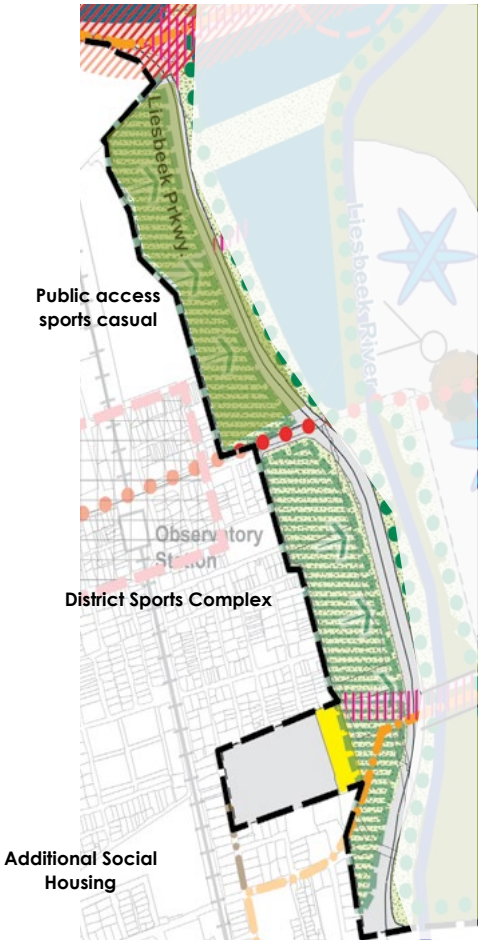
Northern section free to public informal amenity

Southern section regional sports character

- Maintain flood-line mitigation .
- Access to the precinct is critical.(Access off Liesbeek Road required.)
- Height restrictions apply to Mary Kihn school / bowling club site within the Lower Observatory HPOZ.

Desired character

- Green corridor
- Regional sports and recreational facility that caters to the larger sub region of the City.
- Well located and central which can be reached through Public Transport.
- Minimal buildings located within large green fields.
- Additional school to maintain institutional character along Strubens Road.



Detailed plans and sections

26166	CoCT	Open space 2	Recreation/sports
26456-RE	CoCT	Community zone 1	Recreation/sports
28095	CoCT	Community zone 1	Recreation/sports
26458	CoCT	Community zone 1	Hartleyvale Hockey
28257	CoCT	Community zone 1	Circus
28174	CoCT	Community zone 1	Swimming Pool
28124	CoCT	Community Zone 1	Hartleyvale Bowling Club
28125	WCG	Community zone 1	Mary Kihn School for partially deaf




Formal and casual sports grounds examples.

Guidelines

- A new primary school is proposed west of the Mary Kihn School for the Partially deaf, which could share some facilities and costs with this school.
- On the old Hartleyvale Bowling Club site, a social housing development is proposed. This could inter alia accommodate teacher housing. This would replace the COCT Sports administrative offices which would need to be accommodated in the redevelopment of the swimming pool site.
- Intensification of use of the sports facilities. In particular the site currently used by the South African National Circus adjacent to the swimming pool is proposed.
- The upgrading of the current sports-grounds adjacent to Hartleyvale Hockey Grounds to an 10 000 seater soccer stadium for Cape Town City has also been proposed.
- In order to implement these projects and to ensure that the entire sports precinct functions efficiently, it is proposed that a proper land utilisation study and holistic sports management strategy is completed for the sports fields and east of the river if bridge to Valkenberg is built..
- A parking strategy to form part of the management plan for large games. These could include the use of overflow parking on adjacent vacant fields in Malta Road, on the Liesbeek floodplain and on the Mary Kihn School field, which could generate additional revenue for the school. Event- parking to be designed to enhance the public realm, support Water Sensitive Urban Design principles and the 'predominantly' green environment, subject to relevant policies
- NMT routes through and along the edge of the site particularly at the new proposed Valkenberg access, and access to the swimming Pool site to be enhanced,

Land Use

- Sports and recreation uses to predominate but still free public access for local community
- Pedestrian walkways

Related Policies

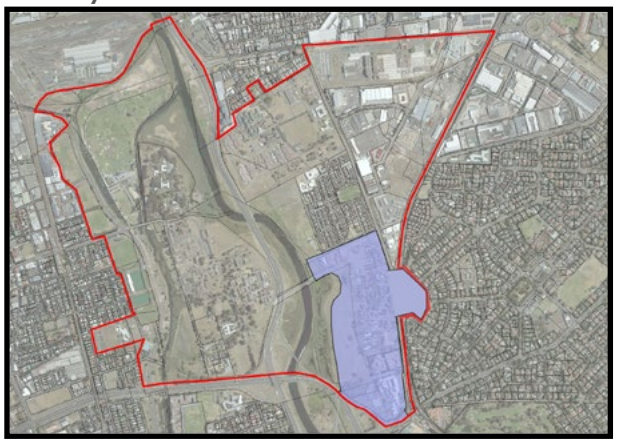
Sport and Recreation Policy Framework (Policy Number 43752) : 28 January 2016

Sport and Recreation Programmes Policy, 2016

8.5. Precinct D: Oude Molen and Pinelands Station

Vision: Residentially led mixed use precinct with cultural heritage features, developed along eco - principles. Exploiting views across to Devils Peak with intensification along Alexandra Road. .

Locality Plan

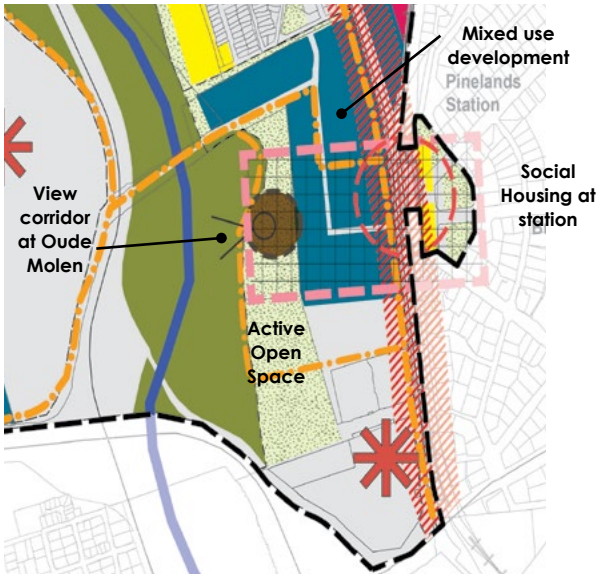


The Oude Molen Precinct, which is comprised of the Valkenberg Psychiatric Hospital's Forensic Unit, the Life Healthcare Group's Vincent Pallotti Hospital, St. Vincent Pallotti Convent, two office blocks (Park Lane and The Park) and the Oude Molen Village itself (which accommodates a mix of residential, commercial and institutional uses). A large area of just under 9ha, which is located on the eastern bank of the Black River, also forms a part of this precinct, and is used for horse grazing and riding; It also includes the land occupied currently by the Valkenberg Hospital forensic ward, The low bulk and coverage of Oude Molen Village mean that there is significant opportunity for infill / redevelopment of this area for other uses.

The Pinelands Station Precinct includes the station forecourt and parking on the Pinelands side of the railway line, as well as the two parks along Broad Walk and Kings Place Roads.

Currently the Pinelands Station is an over head station, which is mainly a destination station. There is minimal park and ride occurring, resulting in largely empty parking areas adjacent to the station on the Pinelands side. It is the nearest rail station for residents of Maitland Garden Village and Oude Molen.

The precinct includes two very large parks which are lawned with some mature stone pines on the station side of the parks.



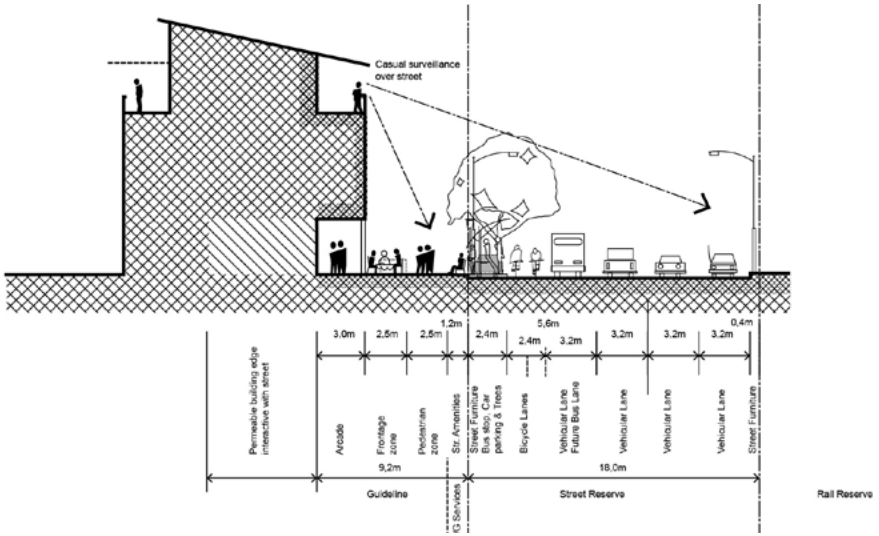
Principles /Goals

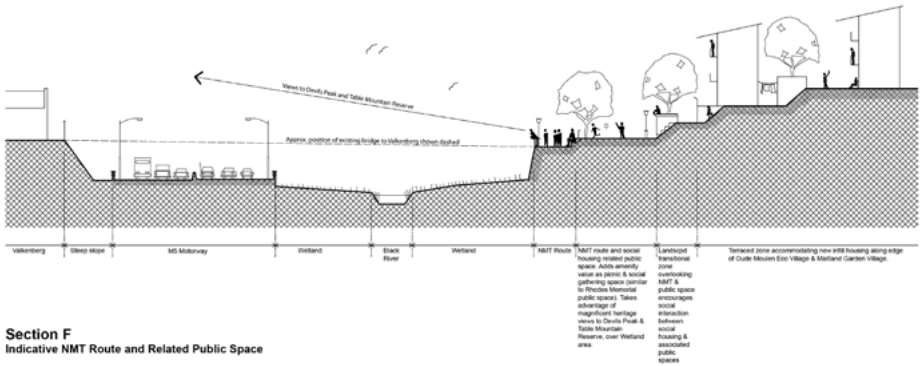
- Mixed use residential led development along eco principles
- Increase density towards Alexandra Road
- Decrease density towards the river.
- Acknowledge heritage structures
- Improve interface with Maitland Garden Village and river.
- Acknowledge the cultural rights of First Nations and integrate heritage and culture into public place design
- Promote TOD through intensification of residential and commercial use around station.
- Promote spatial integration through social housing
- Retain park like character around station on the

Desired character

The proposed character of this precinct is as a intensive mixed use precinct inclusive of offices, residential, schools and related facilities on the Oude Molen side and on the Pinelands side of the station : the proposed character is for a residential precinct adjacent to the station that accommodates social housing (4 storeys). The intensification of use around the station on both sides may justify additional retail facilities on the overhead platform of the station as well as possible retail (small shops) on the ground floor of the forecourt building or residential buildings. An overhead bridge linking Oude Molen and the Pinelands side to be explored.

Detailed plans and sections Oude Molen





Section F
Indicative NMT Route and Related Public Space

Ensure quality public environment

Guidelines

Adaptive reuse of the old F Block wards.

Additional developments should pay homage to current structures. A HIA to inform reuse and redevelopment.

- Buildings of low heritage significance and ungraded buildings may be demolished, altered extended and adaptively re-used as required.
- Oude Molen: Historic buildings to be retained in their entirety, protected and enhanced. Urgent attention should be paid to the restoration of the threatened Oude Molen building. A restoration and plan and a conservation management plan should be submitted to the relevant heritage authority.
- Conserve restore and alter (both external and internal alterations of the Oude Molen) subject to HWC requirements

- **Pinelands Station Forecourt**
- The existing street patterns which narrows towards the station to be maintained. The existing parks are extremely large (±6000m^2 each).
- Buildings to be constructed close to the station to enclose the space and create additional surveillance over the station.
- The approaches to the station should be NMT friendly especially in the case of the Alexandra Road side.

Land Use

The precinct's proximity to Pinelands Rail Station makes it an ideal location for densification and intensification of development along TOD principles.

- In addition, the location of the site adjacent to Alexandra Road provides an opportunity for uses that will support an activity street.
- Land use proposals for the precinct should therefore include opportunities for small scale business operators intensified residential use including social housing as well as higher end Scientific related office uses.
- A transect of intensity of use between Alexandra Road and the river is proposed.
- A portion of the site has significance to indigenous cultural groupings that

have used the precinct for traditional religious practices. Future plans for the precinct should therefore formalise and celebrate some of the green spaces / areas for traditional practices and cultural celebrations.

- Two schools are proposed for the Oude Molen precinct, a High school and primary school to cater for the additional residential land uses proposed for the site.
- Oude Molen Buildings along Alexandra Road should be a maximum of 25m and subject to HIA.

- **Pinelands Overhead Station and forecourt**

It is proposed that the Pinelands Rail Station be redeveloped to provide a safer, more convenient and qualitative experience for those on foot and cycle. The station precinct and facility is to become an activity bridge providing shopping and public services. Bicycle parking, bicycle hire and a pickup point for a local shuttle or bus feeder service will be located in the station forecourt on Alexandra Road.

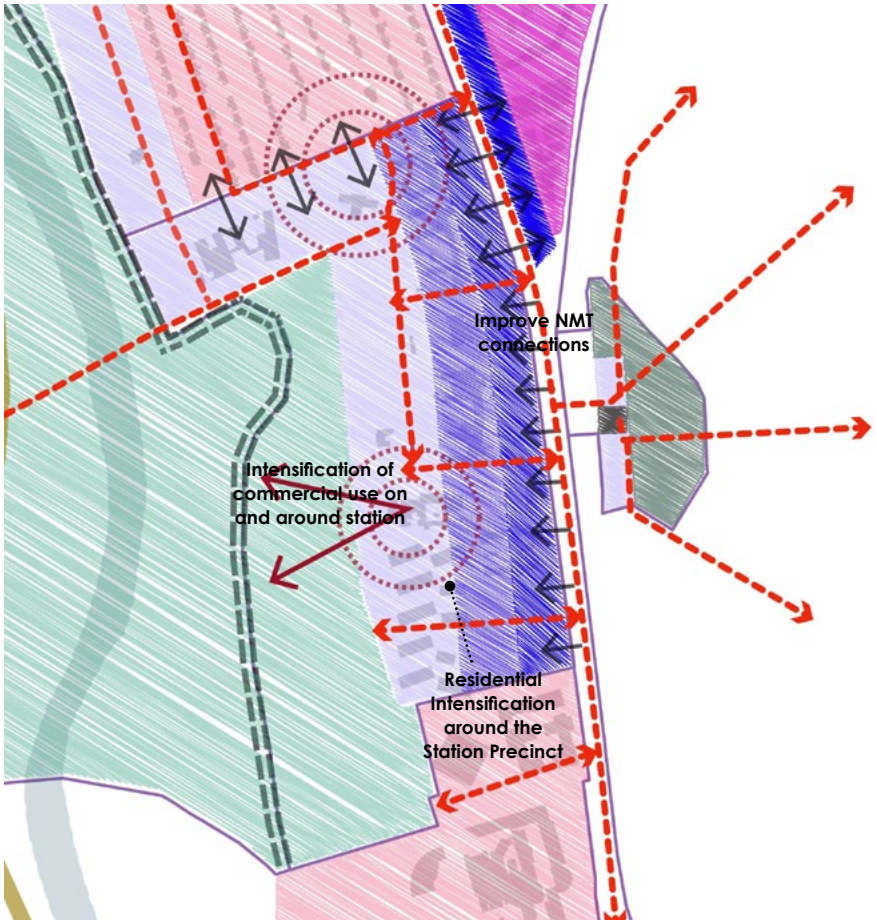
Social Housing

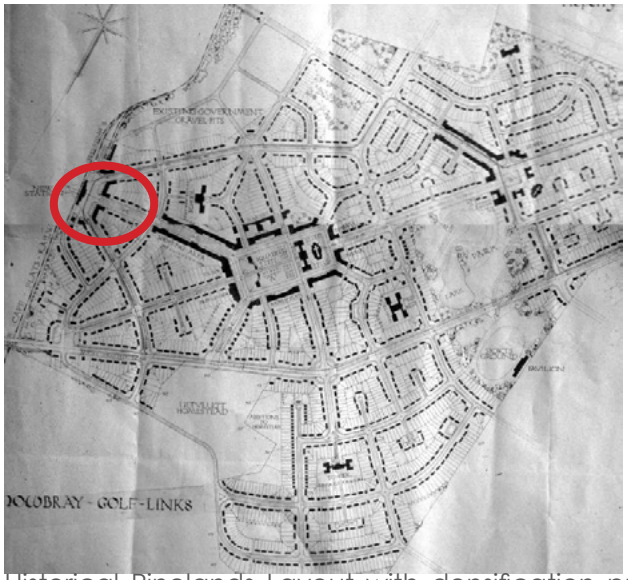
In line with the COCT TOD policies , the area around the Pinelands Station is well suited to intensification of use. The entire Pinelands Precinct falls within a PT2 zone, which does not have any parking requirements.

It is proposed that a social housing project be developed adjacent to the station of up to four storeys in height. This could accommodate between 80-135 units. This is in addition, to the Social Housing that will be part of the Oude Molen development.

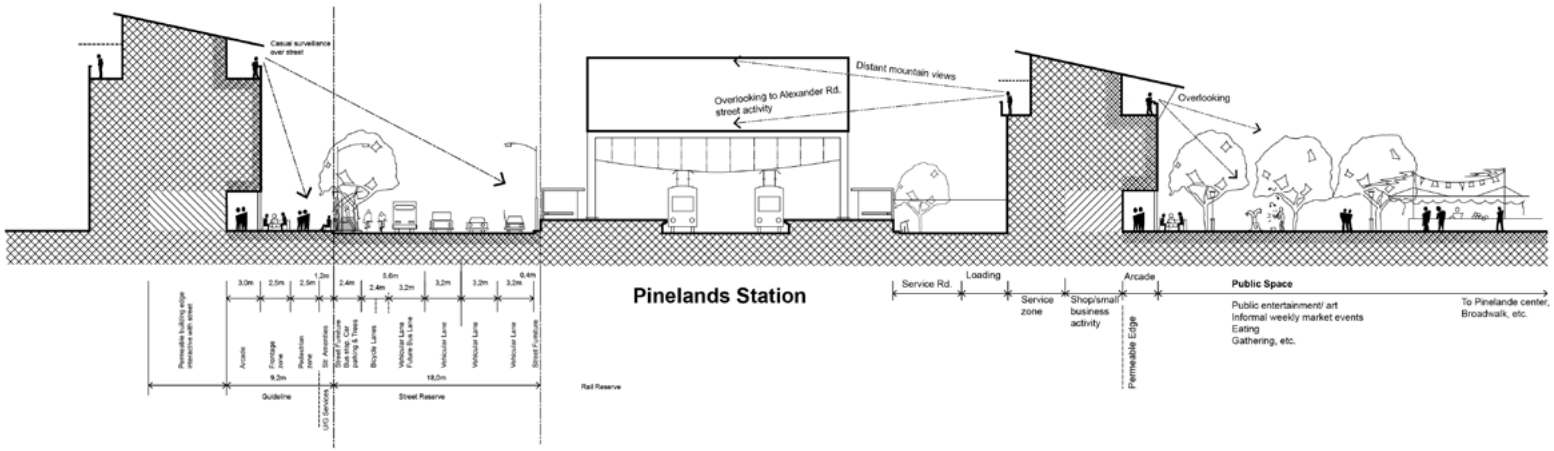
Related Policies

NHRA, City of Cape Town TOD Strategic Framework.
PT2 Zoning DMS Bylaw
TOD Strategy
Heritage Protection Overlay Zone-Pinelands





Historical Pinelands Layout with densification proposed around Pinelands Station (See red circle) c1920 (Source Cape Archives, M4-1902)7 (Coetzer N 2009).



Cross section (notional) through Oude Molen, across Alexandra to Pinelands Station to illustrate potential for TOD Node.

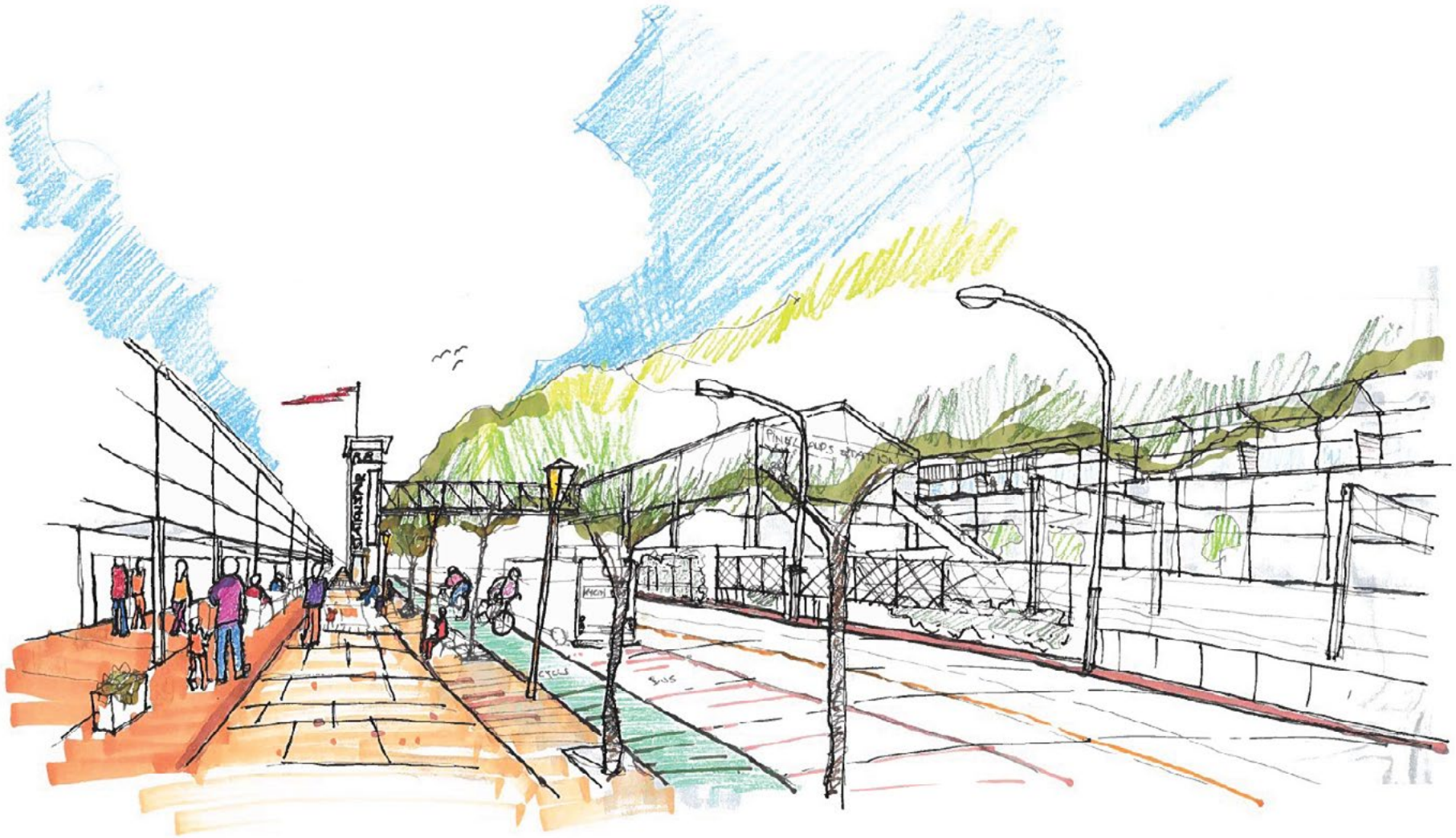


Figure 8.7. Artists impression of Alexandra Road with Pinelands Station on the right and Oude Molen Mixed use on the left.

8.6. Precinct E: Maitland Garden Village

Vision:

Retain and enhance community fabric through intensifying edges only.

Locality Plan

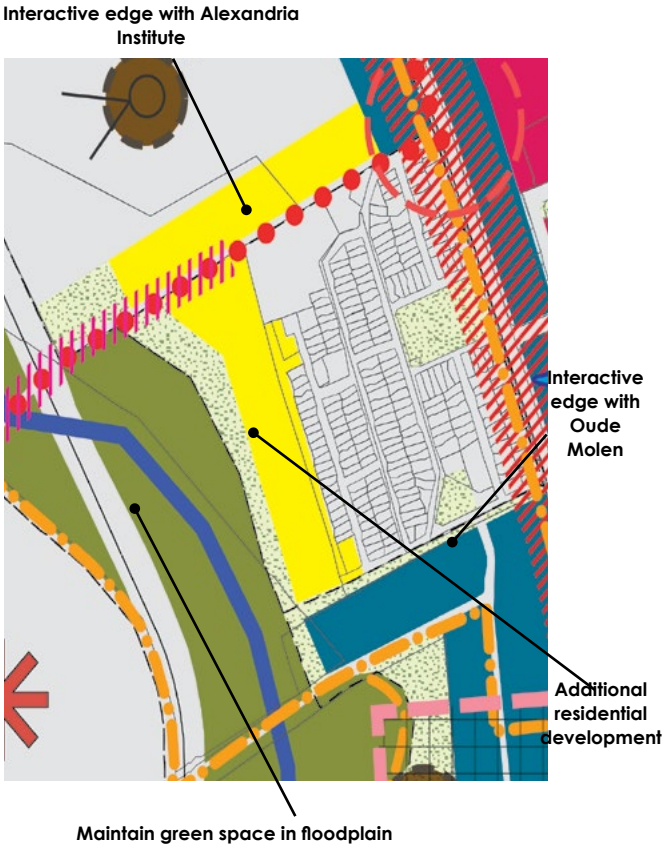
The Maitland Garden Village Precinct, which is comprised of approximately 229 semi-detached residential units, four of which double as home businesses. A Suparette, building construction supply business, primary school, community centre, crèche, park, community field, four places of worship and religious instruction, and a COCT Housing Office are also located here. The Peninsula Golf Driving Range also forms a part of this precinct; According to Melanie Atwell, the Maitland Garden Village was the first Garden Village in South Africa.

Principles /Goals

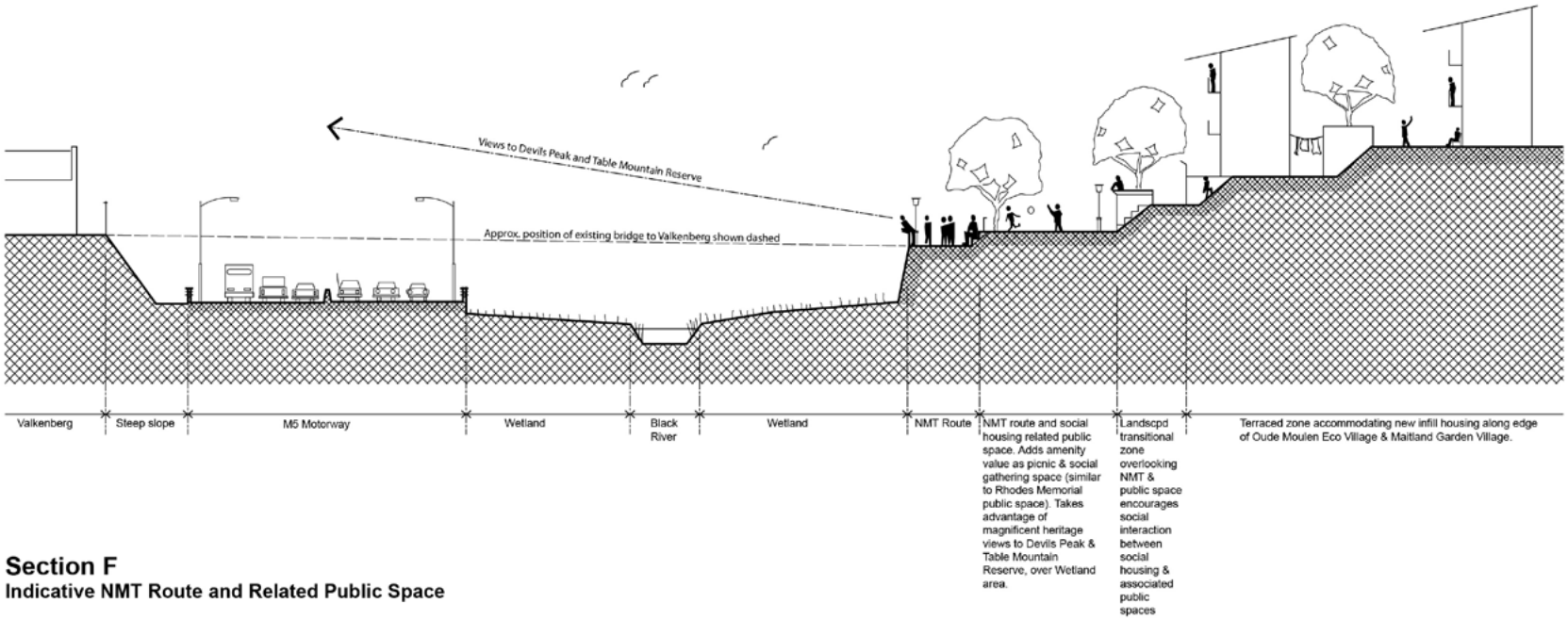
- Retain Garden Village form and scale
- Increase density through additional residential development.
- Small block and fine grain infill on river side of the village.
- Design for pedestrians Street and sidewalk design should prioritise pedestrians. This includes adequate night lighting, and active frontage for eyes on the street.
- Intensification along Alexandra Road edge.

Desired character

The intention is that the village is largely retained in its present form due to its heritage significance and future upgrade and development of the residential properties be guided through urban design guidelines and architectural advice to owners to achieve a consistency of scale within the context of modernization. Some additional housing is proposed to respond to the need from back-yarders as well as the extremely central location of this site in the City in relation to jobs and public transport. An HPOZ as proposed by the City may be onerous on home owners and should be debated in full before being imposed in "blanket" fashion over the entire area.



Detailed plans and sections



Section F
Indicative NMT Route and Related Public Space

Guidelines

Guidelines for the MGV precinct are focused on ensuring that the relationship of the precinct to its surrounds is improved. Key guidelines are as follows and should be further considered in the detailed MGV precinct policy plan:

a) The new housing edge facing the river must offer surveillance over the Park and address the backyard nature of this interface.

b) Any new development within or in proximity to MGV must acknowledge the small scale fine grained character of the village.

c) All infrastructure upgrades, in particular those related to roads in MGV should respond appropriately to the historic street patterns and the need for streets to act as community play areas.

d)Future housing should incorporate social and market related housing .

Projects: Development Strategy for Maitland Garden Village (part of precinct plan)

Land Use :

Mainly residential with associated open space

Mixed use along Alexandra Road (Possible heights up to 15m height)

Preferred densities 30-50 du/ha for new development

Related policies

Social Housing Act , Immoveable Property Asset Management Policy, 2015,

8.7. Precinct F: Alexandra Institute

Vision: Protect and enhance Alexandra Institute by intensifying edges. More efficient spatial layout within Institute.

Locality Plan

The current character is of a low density ,institutional/residential environment. The southern edge of the precinct is underutilized ground with the exception of a few residential structures and facilities.

The Alexandra Hospital occupies a high and prominent part of the site. It has commanding views over the Black River, the confluence of the Liesbeek and Black Rivers, Raapenberg Bird Sanctuary and the SAAO Precinct.

The precinct is home to one of the oldest structures within Study area, namely the Alexandra Mill (Nieuwe Molen), the oldest remaining and largest windmill in the country. The structure is currently not accessible or visible by the public.

Principles /Goals

Interfaces
Different conditions on all sides require different responses.
Intensify edges along Alexandra.
Heritage
a) The Mill should be retained, restored and reused preferably for a public use and public access.
b) Sufficient buffer around the Mill and a view cone from the Mill to the Liesbeek/ Black River confluence

Desired character

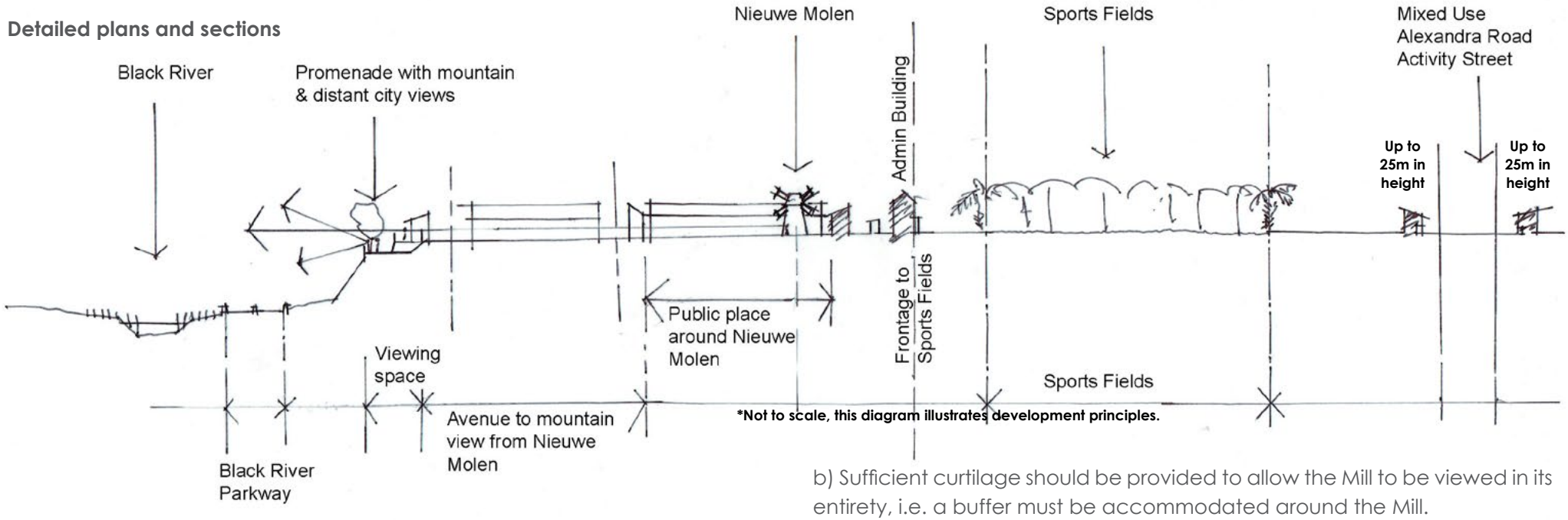
In terms of the requirements of the current users and owners, the main portion of the precinct to remain as it is. However, the proposal is to move the current school facilities along the Alexandra Road edge to be consolidated within the current precinct in the vacant spaces. The southern edge with Maitland Garden Village to be intensified with additional housing. The Alexandra Road edge to be redeveloped as a mixed use precinct to encourage the use of Alexandra Road as an activity street. Alexandra Road to be realigned to connect with Bax Road. This will allow an additional mixed use development site on the western side of Alexandra Road, thus allowing for development on both sides of the road.

Additional housing along Maitland Garden edge

Intensify/efficient uses within Institute

Activity / mixed use along Alexandra Road

Detailed plans and sections



Guidelines

Interfaces

The precinct interfaces with very different conditions on all sides which in turn require different responses. The northern edge of the precinct facing onto the fine grained residential fabric in Maitland which provides the only access to the site. The western edge looks over to the M5 and the Black River and provides dramatic views across to Table Mountain. The M5 does, however detract from the views of the river. The eastern edge is defined by a boundary wall running along the length of Alexandra Road. The southern boundary is defined by a high security fence that turns its back on the MGV.

Heritage

The heritage design indicators of specific relevance to the Mill are as follows

a) The Mill should be retained, restored and reused preferably for a public use and public access. Although this is difficult as it is embedded in the hospital

b) Sufficient curtilage should be provided to allow the Mill to be viewed in its entirety, i.e. a buffer must be accommodated around the Mill.

c) The site of the old werf related to the Mill should be the subject of archaeology investigations in further phases of the work.

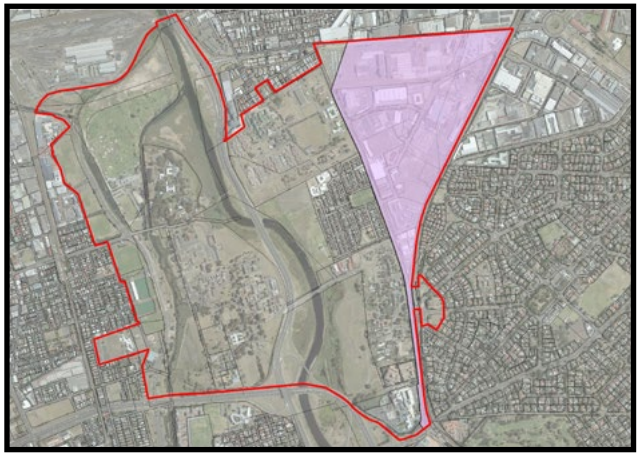
Land Use

- Long term Development Framework required for the entire Alexandria precinct (employ consultants to finalise DF or internal document)
- Move existing schools and NGOs to consolidate current uses in vacant spaces within precinct. (Medium term).
- Sale of land along Alexandra Road Edge for mixed use including residential and retail (Medium term) and possible EMS site.
- Southern edge of site to be developed for housing(Mix of social and market).
- Celebrate Nieuwe Molen precinct(part of heritage project), Short term. Investigate privatisation of building to defray costs of maintenance.

8.8. Precinct G: Ndabeni Triangle

Vision: Eco- industrial Park. Support Hi tech 4IR through expansion of CHTP and consolidation of Depots. Small, niche high quality spaces along Alexandra .

Locality Plan



The Berkley Road Industrial Triangle Precinct, is comprised of space-extensive warehousing, workshops, offices, a vehicle pound and depots (many of which are for fleet vehicles) for a number of the COCT departments. A handful of privately-owned large format warehousing depots are also located in the precinct, together with an industrial business park and a number of smaller manufacturing businesses.

The Cape Health and Technology Park (CHTP) and the Metro Emergency Medical Services Depot (the facility from which ambulances are dispatched) also form a part of this precinct as well as the Ndabeni library; There is over 42ha of land in Berkley Road Industrial Triangle currently used for offices, storage and depots. The sites are not all contiguous and some are better utilised than others. Most of the depots have secure perimeters and provide access for COCT employees only. The COCT owns and occupies over 40ha of the 50ha Precinct including land zoned and used for road purposes.

Principles /Goals

- Retain industrial land use
- Create safer and better NMT connections to connect the precinct (better public interface)
- Better internal transport routes through the area with sidewalks
- Mixed use promoted along Alexandra Road
- Station forecourt should gain more prominence.
- Must support intensification around station precinct (residential and commercial)
- Warehouse functions along rail edge

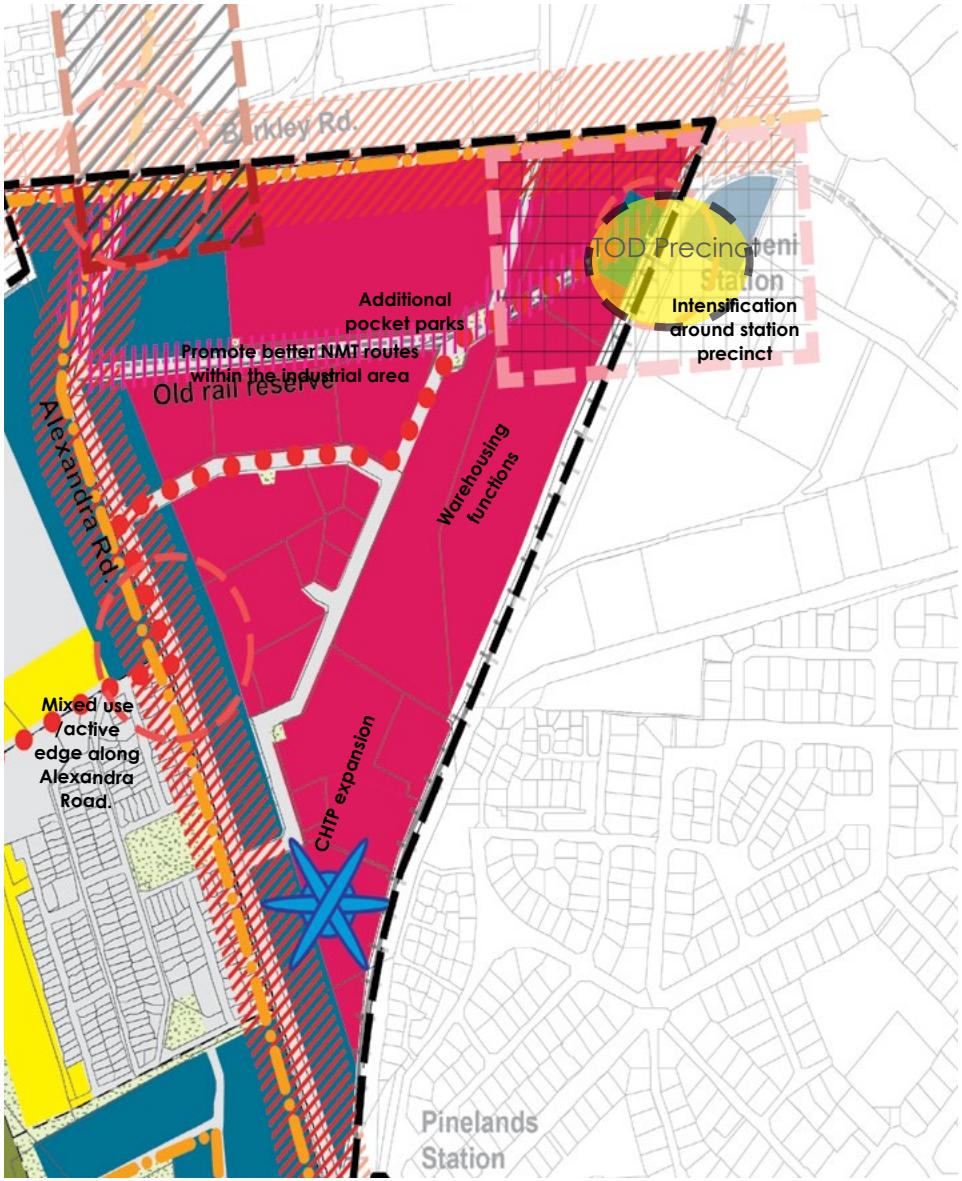
Desired character

Berkley Road Industrial Triangle is to remain an industrial area with some utility functions. The CHTP facility to be extended and the Industrial area may take on a larger health/medical technology role in the form of the CHTP.

The interface along Alexandra Road to become more mixed use with opportunities for retail and office/ commercial on the ground floor.

Current NMT route through precinct

Detailed plans and sections



Guidelines

- A better configuration of the precinct that favours NMT from and to the Ndabeni Station is vital to ensure safety of pedestrians.
- Landscaped NMT route should includes some small pocket parks to provide relief for those working in the industrial area.
- Realignment of the northern parts of Alexandra Road to meet with Bax Street to facilitate improved connection for NMT and PT to Maitland Station and Voortrekker Road.
- Activity to be provided on both sides of Alexandra Road through land use and building configuration. Multi-storey mixed use strip
- TOD development either side of Ndabeni Station.

Land Use

- Maintain industrial nature of precinct.
- Biotechnology to expand along southern edge
- Alexandra Road to become mixed use with light industrial activity / small businesses (urban manufacturing), retail.
- Forecourt in front of Station, some retail should be encouraged.

Related Policies

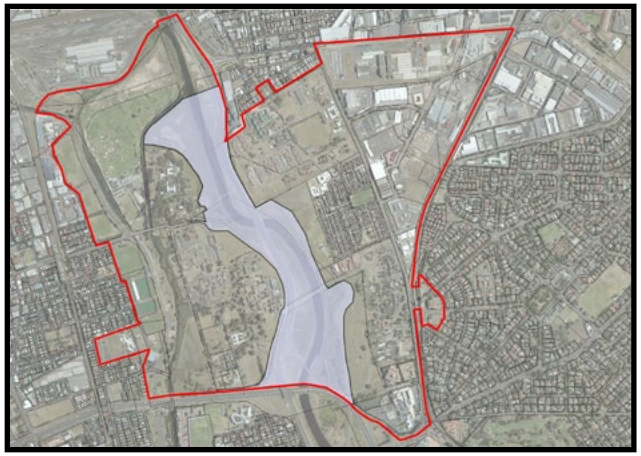
TOD Strategic Framework

8.9. Precinct H: Black River Precinct

Vision:

Protected river corridor with managed interaction on the eastern bank and protection interaction on the Western Bank.

Locality Plan



The River Corridor, which is defined as the land associated with the Black River and floodplains, which is largely undeveloped. The precinct is used for a limited range of recreational activities, and is comprised of sensitive wetland habitats. At the base of the Observatory Hill to the east and north-east is the Raapenberg Bird Sanctuary (Proclaimed Nature Reserve) which, apart from its intrinsic ecological value, enhances the nature and appearance of a riverine estuary where the two rivers combine.

Principles /Goals

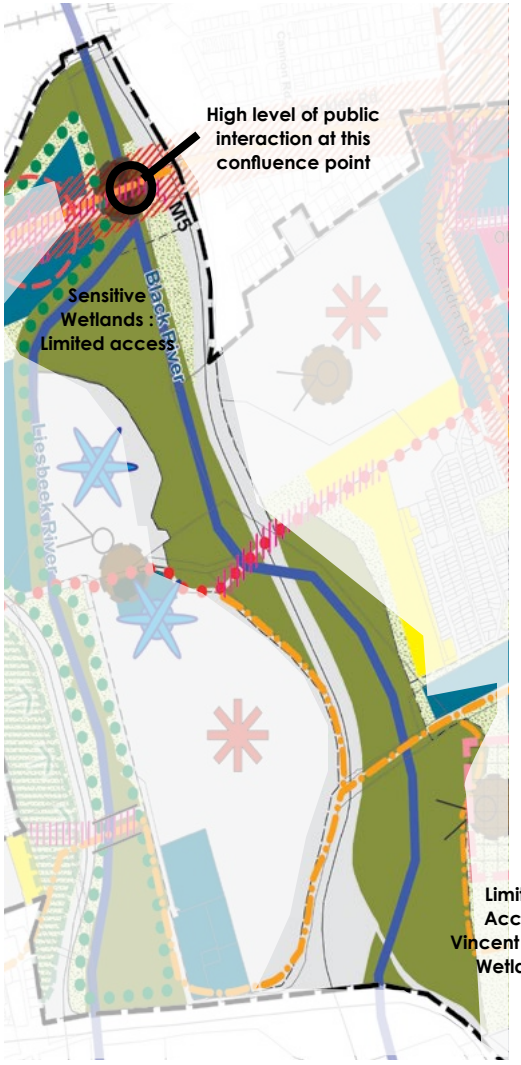
- Protect ecological functioning of river system and associated wetlands
- Limited accessibility and interventions only at certain points.
- Cultural accessibility is promoted as part of larger heritage project.
- Celebrate confluence point

Desired character

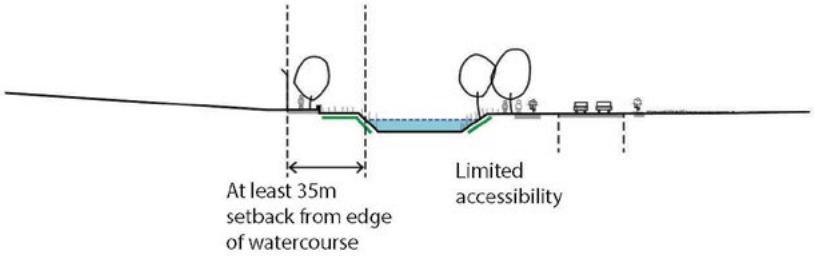
The Black River corridor will retain limited access particularly around the wetland areas. Development , however in the form of landscaping is promoted on the M5 road reserve that celebrates the confluence point. Generous pedestrian space to be provided on all four corners

Peripheral edge development to be avoided where they adversely impact upon such cultural and environmental qualities of significance.

The presence of the riverine system, with its strong linear spatial qualities and the openness and visual accessibility of parts of the site, to provide a strong sense of visual relief in an urbanised landscape.



Refer to figures 8.8 and 8.9 regarding the nature of the green areas.



Precedent of celebration of confluence area.


Medical healing garden , Iowa

Maori Kekeru igeon design in sculpture


Maori traditional weave design incorporated in urban space.

Guidelines

NMT path to link across the Black River.
NMT paths on eastern bank to Berkley road crossing
Additional road bridge for public transport across the Black River - Station Road Extension to link up with Maitland Village Precinct.

- A buffer area of approximately 35m to be maintained adjacent to the delineated edge of all aquatic features.
- Diversion of water (particularly freshwater) into the wetlands ;hydrological and/or water quality impacts associated with the changed hydrological, hydraulics, position and water quality of the Black River to be considered in the spatial design of the site.
- If/where possible, fencing should be removed
- If/where fencing is necessary, it should be replaced by a fence that is permeable to small fauna

Land Use Proposals

- Maintain existing bridge but develop NMT around Valkenberg.
- New Road bridge linking Station Road and Maitland Garden Village.
- Landscaped Cultural park/study to be initiated to include process for acknowledgement of cultural diversity in precinct (details and extent to be determined as part of the larger heritage study).

Related Policy

CoCT NMT Policy and Strategy, Volumes 1 and 2
CoCT Urban Design Policy

8.10. Public open space provisions and public facilities

Of the ±300ha ha making up the Study area, There is currently 106,2ha (35%) open space/sports fields at the moment. Of the current Open space, 19.9ha is available to the public at the moment. Once the LSDF proposals are developed, there will be 91,9 ha (30,6%) set aside for open space, biodiversity, cultural activity, recreational facilities in the development framework . Of the 91,9 ha, 47,4 ha will now be open to the public. The existing sporting facilities are mostly leased facilities for private use and currently operating at capacity. There are very f**ew existing functional parks** located within the Two Rivers site. Therefore the new linear park will add to the public open space provision.(Note Green Point Urban Park is 10,5ha in size)

Precinct A: Liesbeek River corridor : river walk linear park (28,5ha)
28,5 ha of corridor to be preserved for habitat with some NMT accessibility along the edge of the corridor. This will be maintained as **public open space** or private open space that has a right of way access for the public along the river corridor. **River Club and Transnet Triangle Public Open Space Proposals**
The river club development should include ±40% of the site as public open space. This includes NMT access along the river banks. As well as an open space corridor as indicated that will allow faunal movement across the site.

Precinct B: Valkenberg Estate & SAAO and SKA
This area currently has fairly large areas of **private open space** in line with the Development Framework prepared for the Valkenberg estate. The facility itself is a regional public facility which provides services to greater Cape Metropolitan region. The SAAO precinct is a grade 1 heritage precinct. No open space to be removed from this precinct. The site contains the existing SAAO, a building for SAEON and with the addition of the SKA precinct will constitute a scientific learning precinct of National importance. A **public plaza (0,2ha)** (Cosmology square) will be provided between the two facilities. Valkenberg Estate is a gated institution and therefore any green space within this facility is private.

Precinct C: Sportsfield Hartleyvale/Malta Road Precinct Open Space /public facilities Proposals(13,9ha)
The current and future role of the Hartleyvale/Malta Road Precinct as recreational area for the surrounding communities is discussed in this section.

This role will gain prominence assuming the densification of the Voortrekker Road Corridor and the further densification of Observatory which will put pressure on the existing facilities and create the demand for more. Hence the development of regional facilities for the surrounding communities is important, given the location of this precinct,in the centre of the City. It is very well serviced by public transport particularly to poorer areas on the Cape Flats. With the intention to densify the Voortrekker Road corridor and Main Road through the UDZ mechanism. Observatory and surrounds has already experienced a densification . Therefore quality regional facilities are essential.

Precinct D: Oude Molen and Pinelands Station (9,3ha)
Two schools are provided in this precinct and their associated sports-fields amount to an area of approximately 2.38 ha. The public open space between the Oude Molen development precinct and the river corridor will be retained as POS (7,4ha). The Oude Molen (Old Mill) site to be preserved and the surrounding building to be a community facility including a hall (4202m^2). The proposed library and public space are intended to be facilities to be shared with Maitland Garden Village to facilitate integration between the precincts. Some urban agriculture to be maintained of ±1619m^2 . There are two large parks and a large vacant portion of land adjacent to the station on the Pinelands side of the railway. It is proposed that a portion of the forecourt be utilised for residential leaving 1.1 ha of park remaining.

Figure 8.8. Public Open Space provision (current and proposed additional)

No on map	Land use	Description		±Size (ha)
45	School	School	7494	0,7
46	Institution	Oude molen	4202	0,4
47	POS	Urban agriculture	1619	0,2
48	School Sports field		6850	0,7
50	School Sports field		4353	0,4
51	School		5114	0,5
52	Community	Library & community centre & small square	3158	0,3
89	POS	Recreational area & environmental buffer zone	74591	7,5
91	POS	Green network	2554	0,3
122	POS	Existing pool	2346	0,2
55	POS	Square	1818	0,2
				11,4

Precinct E: Maitland Garden Village (5,3ha)

Maitland Garden Village already has two Public Open Spaces within the built fabric. Two additional open spaces are proposed as well as a large green space between the development and the river corridor to be created.

In total public open space in this precinct will be 3,25 ha and community facilities which include 2 church sites, two school sites and an additional community facility amount to 1,83 ha. Total 5ha POS and Community.

Precinct :F Alexandra Institute

This precinct already has extensive private open space in the form of a very large sportsfield for residents and extensive green areas between residential buildings. There are three schools on the site for children and adults with special needs and these will be maintained. The Alexandria Institute is a regional facility and will continue to function as such.

Precinct I: Black River Corridor

The Black River corridor consists of mainly protected ecological river corridor of which 37,7 ha is river corridor and 1,9ha is public open space dedicated to cultural heritage at the river crossing precinct.

Precinct J: Ndabeni Triangle.

A number of Pocket parks are proposed for workers in the Industrial area. Smaller walk-able range parks are proposed rather than one large facility due to the size of the precinct. The parks and green NMT space between the parks will be used to mitigate storm-water . View to creating an Improvement District for Ndabeni that will look after public areas.

Precinct	Total Area	Biodiversity	Open space (ha)	POS & Biodiversity as % Total area
Precinct A: The Liesbeek River Corridor River Club and Transnet Triangle(sub- area)	50,6 (43,7 ha) (6,9ha)	9,5 ha	19	56,3%
Precinct B: Valkenberg Estate , SAAO, SKA	40,6		0,2 (plaza)	0,5%
Precinct C Sports-fields	22,9		13.9ha	60.1%
Precinct D: Oude Molen and Pinelands Station	30,1		9,3	30,9%
Precinct E: Maitland Garden Village	17,9	0	2,8	15,6
Precinct F Alexandra Institute	29,2	0	0,7	2,4%
Precinct G: Ndabeni Triangle.	56,9	0	0,2	0,4%
Precinct H: Black River Corridor	48,5	35	1,3	74,8%
Total	**299,9**	**44,5ha**	**47,4ha**	**30,6%**

The following tables uses the Guidelines and Standards for the Planning of City of Cape Town Social Facilities and Recreational Spaces (3rd revision: 2014) Guidelines for public facilities to determine deficits in the provision of public facilities. Two tables are provided, one for each side of the Black River (East and West).

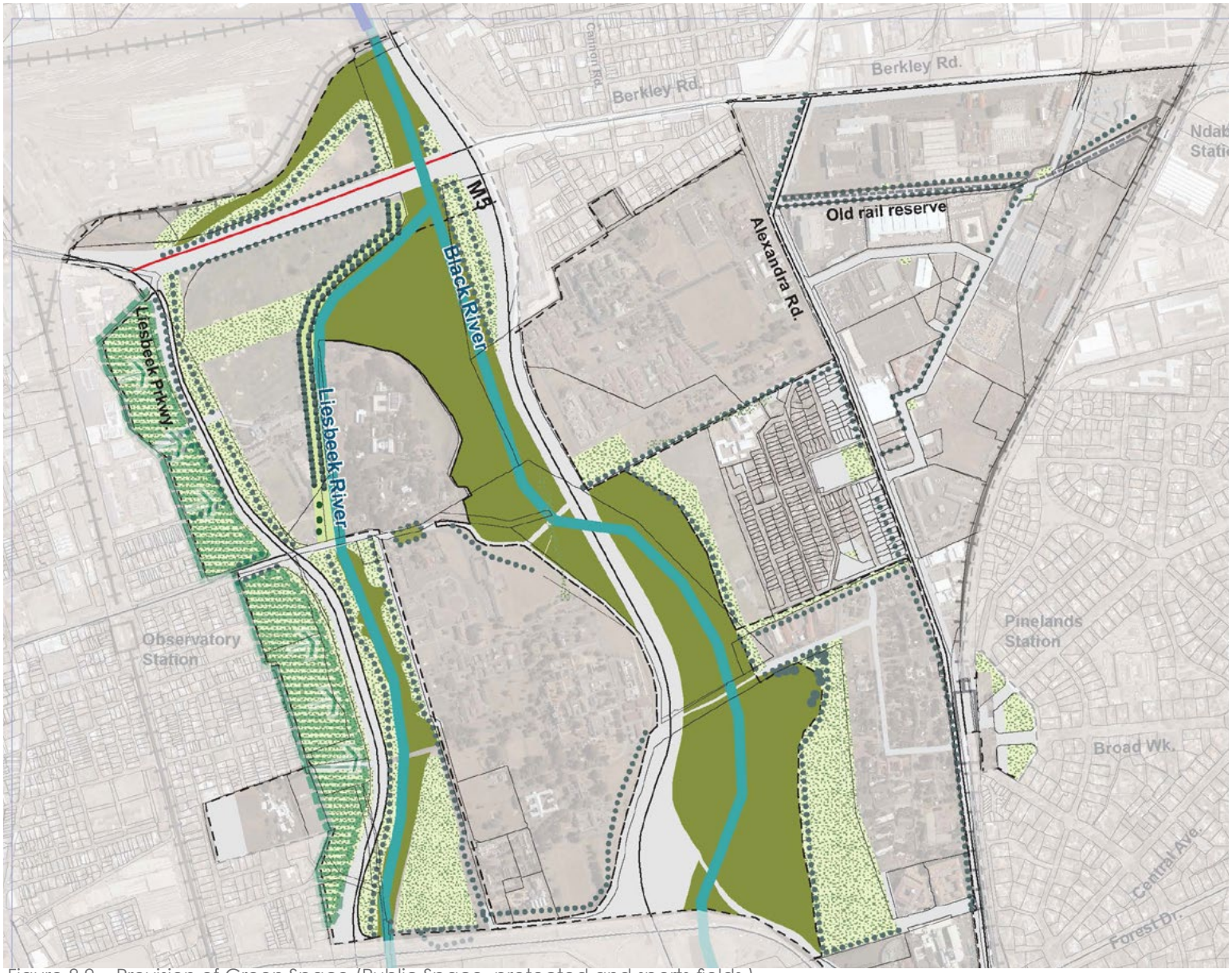


Figure 8.9. Provision of Green Space (Public Space, protected and sports-fields.)

EAST SIDE	POP= 22652 (Incl existing Maitland Garden Village)	*Population estimation based on a household size of 3.2. (Census figures 2016:Average household size Cape Town).			
Community Facility	**Population Threshold (for smallest facility)**	**Current facilities/ Planned facility**	**Required No.Facilities (population = 22652)**	**Deficit No. based on 22652 population**	**Comment**
Health Clinic	30000	0	0,8	0	
Fire Station	100000	0	0,2	0	
Police Station	60000	0	0,4	0	'To improve visible policing 1 station per 30000 people is considered desirable by planners.'
Community Hall	10000	1	2,3	1	Standard depends on the capacity of the facility
Library	20000	1	1,1	0	Ndabeni, library
ECDs	1000	1	22,7	22	No evidence of crèches in area
Primary Schools	5500	3	4,1	1	Planned
Secondary Schools	12500	0	1,8	2	
Adult learning Centre	100000	0	0,2	0	
Sports Facility/ complex	0.23 ha/3000	1,35 ha.	1,7	0	
Parks	0.4 ha/1000	13,70 ha.	9,1	0	Multiple parks peppered throughout the neighbourhood
Places of Worship	3000	2	8	0	
Recycling facility	Determined by demand.				
Local Market (informal trading)	5000	1	4,5	4	Additional informal Market around Pinelands Station/Oude Molen is foreseen.
Post Office	10000	0	2,3	2	
ICT access point	20000	1	1,1	0	Smartcape at library
Multi-purpose hall	15000	0	1,5	2	Multi Purpose hall at Oude Molen

WEST SIDE	POP= 8602	*Population estimation based on a household size of 3.2. (Census figures 2016:Average household size Cape Town).			
Community Facility	**Population Threshold (for smallest facility)**	**Current facilities/ Planned facility**	**Required No. Facilities (population = 8602)**	**Deficit no. facilities (8602 persons)**	**Comment**
Health Clinic	30000	0	0,3	0	
Fire Station	100000	0	0,1	0	
Police Station	60000	0	0,1	0	'To improve visible policing 1 station per 30000 people is considered desirable by planners.'
Community Hall	10000	1	0,9	0	Standard depends on the capacity of the facility
Library	20000	0	0,4	0	Observatory library
ECD Centres: Educare centres	2400	0	3,6	4	These must be provided in the residential developments.
Primary Schools	5500	1	1,6	1	Planned
Secondary Schools	12500	0	0,7	1	Planned
Adult learning Centre	100000	0	0,1	0	
Sports Facility/complex	0.23 ha/3000	13,90 ha.	0,7	0	Including school sports fields
Parks	0.4 ha/1000	18,80 ha.	3,4	0	Multiple parks peppered throughout the neighbourhood
Places of Worship	3000	1	3	2	
Recycling facility	Determined by demand.				
Local Market (informal trading)	5000	0	1,7	2	Additional informal trading around the Observatory station precinct is foreseen as well as Pinelands and Ndabeni Forecourts.
Post Office	10000	0	0,9	1	Closest Observatory
ICT access point	20000	0	0,4	0	Smart-cape at library
Multi-purpose hall	15000	0	0,6	1	Sports and Rec related multi purpose hall required at Hartleyvale/Malta precinct

8.11. Spatial representation of restructuring and integration; Locations of publicly funded housing development

	Description	Total area for housing	Possible no. units (high scenario) social housing (± 50% of floor space of total floors space dedicated to housing.)**
1	River Club/Transnet -Social Housing (Public Private Partnership)	11,5	1221
2	Oude Molen along Alexandra	5,4	1648
3	Maitland Garden Village on Golf Links	1,4ha	616
4	Alexandra Institute on Alexandra Road edge where school is and rebuild school. Alexandra Road edge on realigned abattoir site.	2,6 ha	2109
5	Pinelands Station housing	0,6	138
6	Housing on portions of the old Bowling Club in Observatory	0,6	162
7	Ndabeni Station surrounds Housing		224
	Total no Units possible		±6118 units

**Note that these are based on scenarios and may change dependent on the final development mix agreed in the precinct plans. The type of housing mechanism proposed to be determined on a precinct by precinct basis.

Figure 8.10. Diagram illustrating potential publicly funded housing projects.

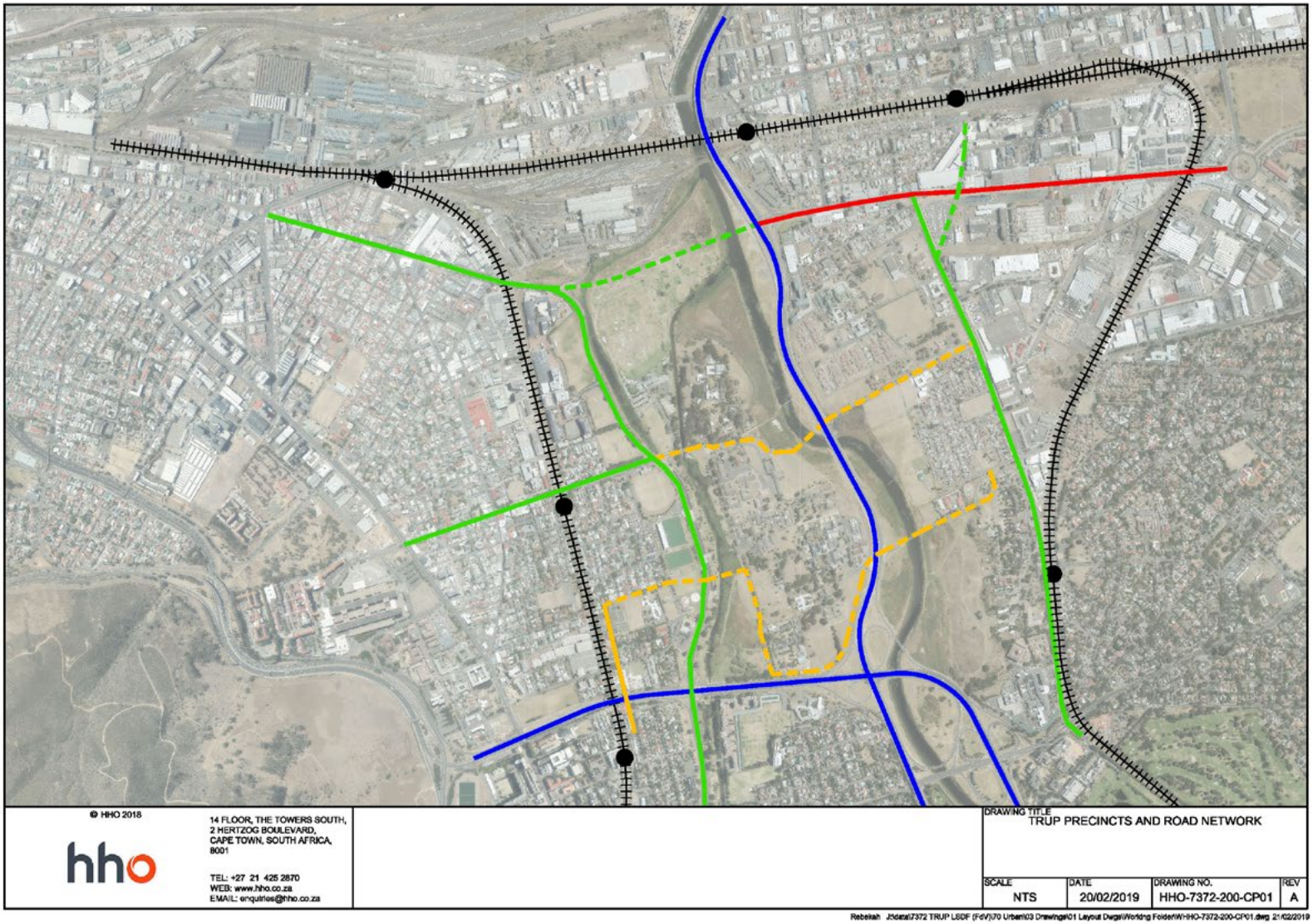


Figure 8.11. Diagram illustrating transport related projects required to support development within the study area.

Spatial representation of Transport related projects

Upgrading of Berkley Road

Road widening

New Road

New Public Transport and /or NMT routes

The IRT (trunk) network is not planned to extend through to the study area, as the public transport network is not designed to replicate high order (trunk) services, given the very good rail infrastructure in the vicinity of the site. The fact that the rail system is not performing is due to operational failure/ collapse/, which is a separate issue from network design.

Feeder services (like the IRT feeders operating in other areas) are planned to link with the stations.

9. Implementation Framework

Consultative meetings were held with the COCT line departments on 2 August 2019, 6 August 2019 and 11 August 2019. A meeting was also held on 15 August with WCG line departments. Written comments were also obtained from the line departments. The purpose of the consultative engagements with the City was:

1. To solicit comments on the draft proposals of the LSDF;
2. To understand the funding structures of relevant sector departments; and,
3. To understand the sector department's future plans in this study area.

Action areas (Catalytic projects)Key infrastructure requirements to enable development of areas prioritized are listed in the table below: .

	Proposal	Related Infr. Or planning projects	Project/policy description	Approx budget	Approx timeframe for planning	Implementation agent	Funding agent	Policy /objective that this projects fulfils
	Planning projects							
	Precinct Plans			**Budgets for planning not impl.**				
P1	**Oude Molen**	**T2, C1, C5, C6**	**Urban Design Framework for Oude Molen including rezoning. Restructuring zone overlay zone**	**R3 900 000**	**UDF 6 months Rezoning 1 year**	**DPW**	**DPW**	**Integrate /Activate economic**
P2	**Hartleyvale /Malta Regional Sports framework plan**	**T4**	**Sports and parking framework**	**R350 000**	**3 months**	**CoCT Parks and Recreation**	**IDP**	**Enhance/protect**
P3	**SKA/Valkenberg**	**C1, C4**	**Land swap with SKA and finalisation of agreement with Dept Health re site. New SKA campus building**		**3 years**	**DPW (Dept Health, NRF), RC , SKA, SAAO**	**NRF with possible purchase from RC.**	**Enhance/protect Activate economic**
P4	**a) Ndabeni Development Framework b) Ndabeni Mixed use and TOD at Station Precinct**	**T2, C1**	**Transport and urban design framework for realignment of Ndabeni Precinct. Process to rezone and sell land along Alexandra Road as well as TOD Precinct at Ndabeni Station.**	**Internal**	**2 months 12 months**	**COCT roads (With help from SPUD) Property Management**	**COCT**	**Activate economic**

	Proposal	Related Infr. Or planning projects	Project/policy description	Approx budget	Approx timeframe for planning	Implementation agent	Funding agent	Policy /objective that this projects fulfils
P5	Alexandra Institute Development framework and Mixed use development – subdivide , rezone and sale of mixed use.	T2	Alexandria Institute Urban design framework and rezoning	R 1200000	6 months UDF 1 Year rezoning	DPW (with DOH)	DPW	Activate economic
P6	Liesbeek/River Club Corridor NMT route River Club Mixed use Development	T1	NMT route along Liesbeek River edge	-NA	12 months	Private land owner with SPUD	Private	Enhance/protect
P7	River Club Mixed use precinct	T1, C4	Mixed use development implementation(phased)	NA	36 months	Private	Private	Activate economic
P8	Pinelands Station Social Housing and retail	C1	Subdivision, rezoning and tendering of social housing project at Pinelands Station Forecourt.	R1 200 000 planning	18 months	COCT: Human Settlements ?	DOHS	Integrate/Activate economic
P9	Cultural heritage project for entire TRUP site – engagement.		Cultural heritage mapping and framework project inclusive of indigenous people narrative.	R1 500 000	12 months	In consultation with HWC/Department of Cultural Affairs & Sport and I&APs	DECAS?	Enhance/protect
	Transport Projects	Related Planning Projects		CAPEX				
T1	Berkley Road Extension	P.8	Extend Berkley Road to meet Liesbeek	R153 560 000		CoCT Transport	CoCT ? USDG	Integrate
T2	Alexandra Road deviation and dualling	P.6, P1 and P.5		R18 600 000				Activate economic
T3	Access road from Liesbeek and bridge to Valkenberg			R9 840 000 R5 000 000		DPW	DPW	Integrate
T4	Access Road to Hartleyvale Precinct	P2		R 2 880 000		COCT Transport	??	Integrate
T5	Ndabeni Internal Roads realignment	P4						Activate economic

	Proposal	Related Infr. Or planning projects	Project/policy description	Approx budget	Approx timeframe for planning	Implementation agent	Funding agent	Policy /objective that this projects fulfils
T6	Station Road Extension	Various	Into Observatory Rd, across M5 & Black River, to Alexandra Rd First section rehabilitate Section to river Bridge section Eastern section	3 920 000 3 600 000 48 000 000 6 400 000	Long Term	CoCT Roads	USDG	Integrate
T7	Ndabeni NMT upgrading	P4						Integrate
T8	Link from Hartleyvale to Strubens Road.	P2		R4 480 000	Long term	CoCT Transport	USDG	Integrate
T9	Liesbeek Parkway Dualling			36 200 000	Medium term	CoCT Transport	USDG	Integrate
	Civil Projects			CAPEX				
C1	Athlone WWTW (Already in progress)	P1, P3, P4, P5, P6, P7, P8,		R1 billion	2026	Coct Water and sanitation	USDG	Activate economic
C2	Flood mitigation measures River Club	P6				Private (developer)	Private	Protect/enhance
C3	Conversion of historical river course to Swale	P6				Private	Private	Integrate Protect/enhance
C4	New 132/11 kV Main Switching station on RC along Observatory Road measuring 80m by 80m	P6	Outdoor 132kV gear (in line with a 80x80m site) an indoor solution would attract more cost 132kV buried cabled feed arrangement (this is the norm for the city bowl area). This is over and above the normal contributions payable to CoCT	R100million			Private	Activate /economic
C5	New 132/11 kV Main Switching station on the Oude Molen Site	P1, P2, P3, P4, P5 , P6, P7 , P8	As above	R100million		DPW/PPP	DPW/Private	Activate /economic
C6	Upgrade water pipes (various)	P1, P2, P3, P4, P5 , P6, P7 , P8		R5000000	Medium	Coct Water and sanitation	DCs and (CTOD) 2018/19 master plan	Activate economic, integrate
C7	Raapenberg pump station & rising mains upgrade			R20 000 000 R54 000 000	Coct Water and sanitation. Part of larger project for the sub region	Coct Water and sanitation	DCs and (CTOD) 2018/19 master plan	Activate economic, integrate

	Proposal	Related Infr. Or planning projects	Project/policy description	Approx budget	Approx timeframe for planning	Implementation agent	Funding agent	Policy /objective that this projects fulfils
C8	Athlone minor P/S sewer system master planning projects			R 44 500 000	.	Coct Water and sanitation	DCs and (CTOD) 2018/19 master plan	Activate economic, integrate
C9	DN1050 Woodstock outfall upgrade			R 36 000 000		Coct Water and sanitation	DCs and (CTOD) 2018/19 master plan	Activate economic, integrate
C10	DN1350 bulk mains upgrade OR new independent DN700outfall parallel to DN1350			R 50 000 000 OR R 32 000		Coct Water and sanitation	DCs and (CTOD) 2018/19 master plan	Activate economic, integrate
	Ath-LM-02 - Upgrade of collector sewer			R 2 512 000		Coct Water and sanitation	DCs and (CTOD) 2018/19 master plan	Activate economic, integrate
	Ath-RB-F01 - New pumping station and rising main (required for Precinct E) -			R 700 000		Coct Water and sanitation	DCs and (CTOD) 2018/19 master plan	Activate economic, integrate

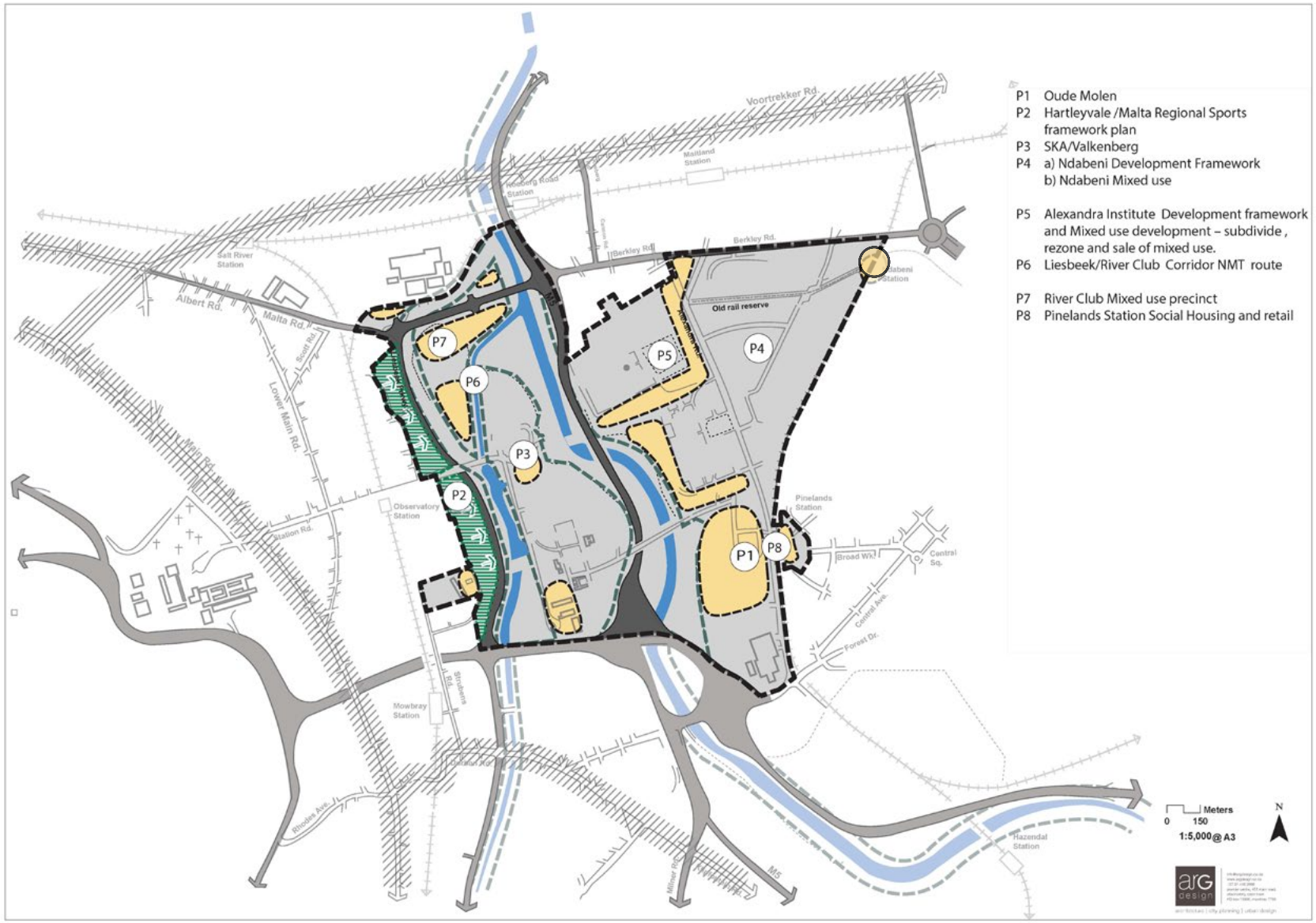


Figure 9.1. Planning Projects

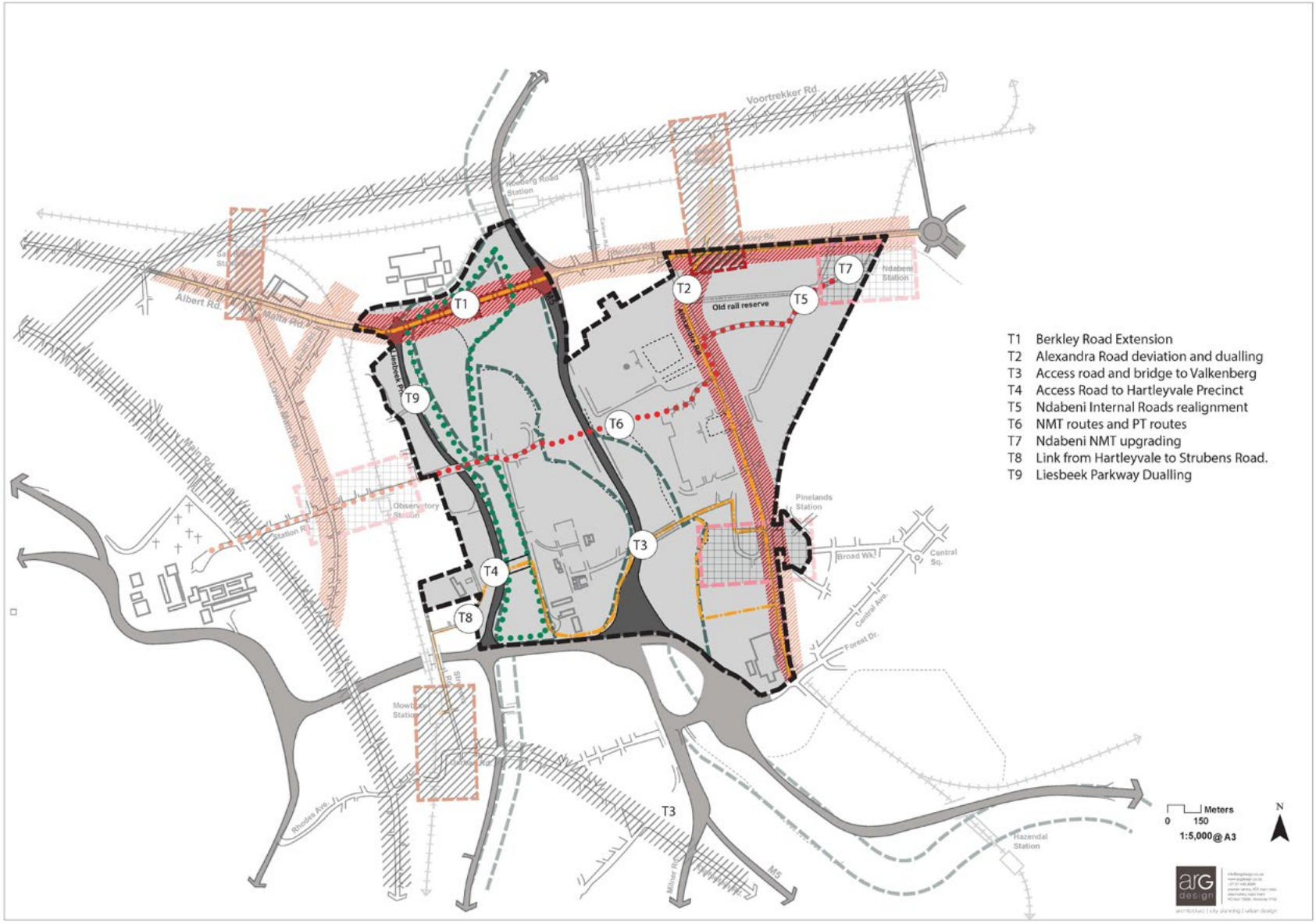


Figure 9.2. Transport Projects

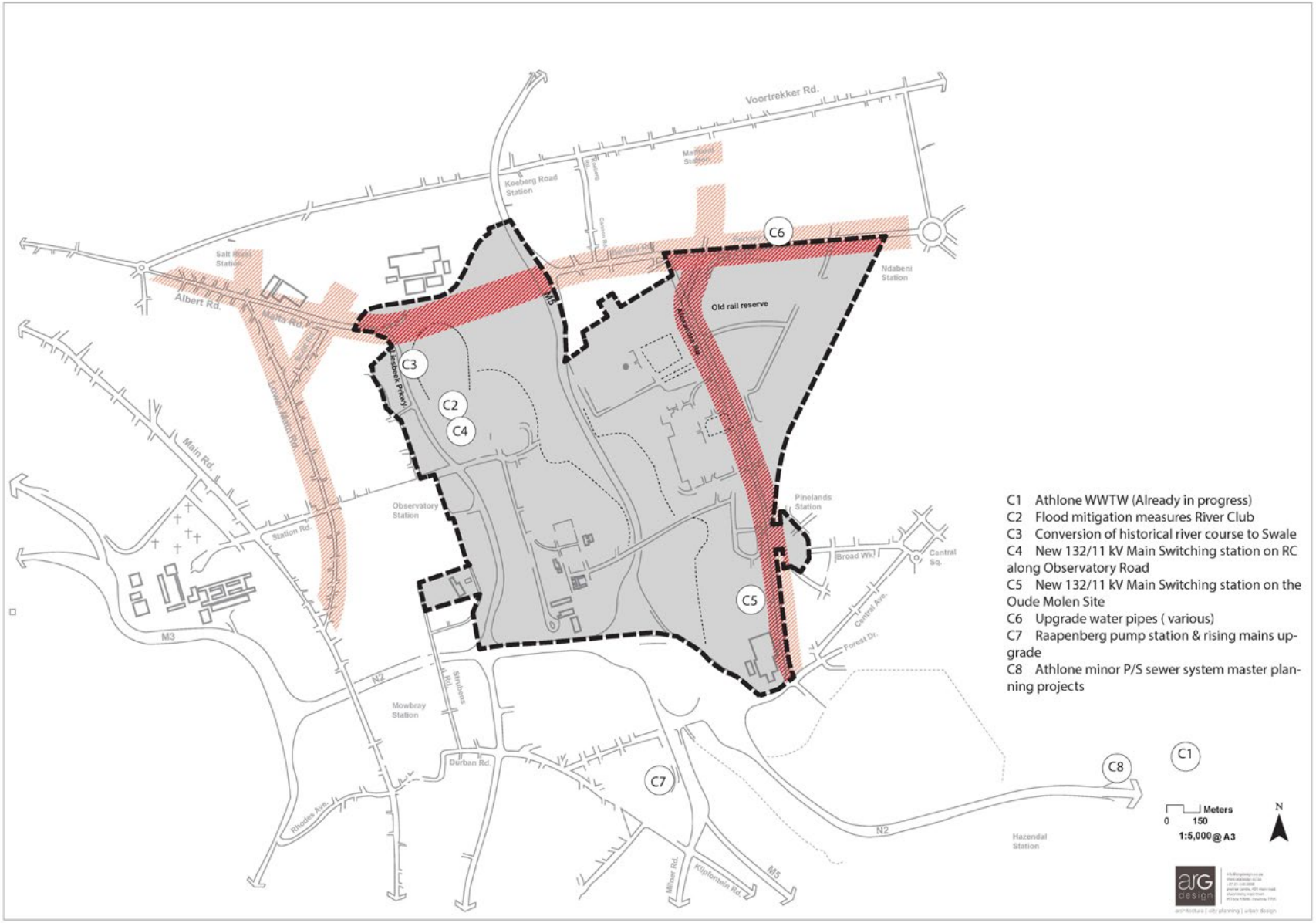


Figure 9.3. Civil engineering projects

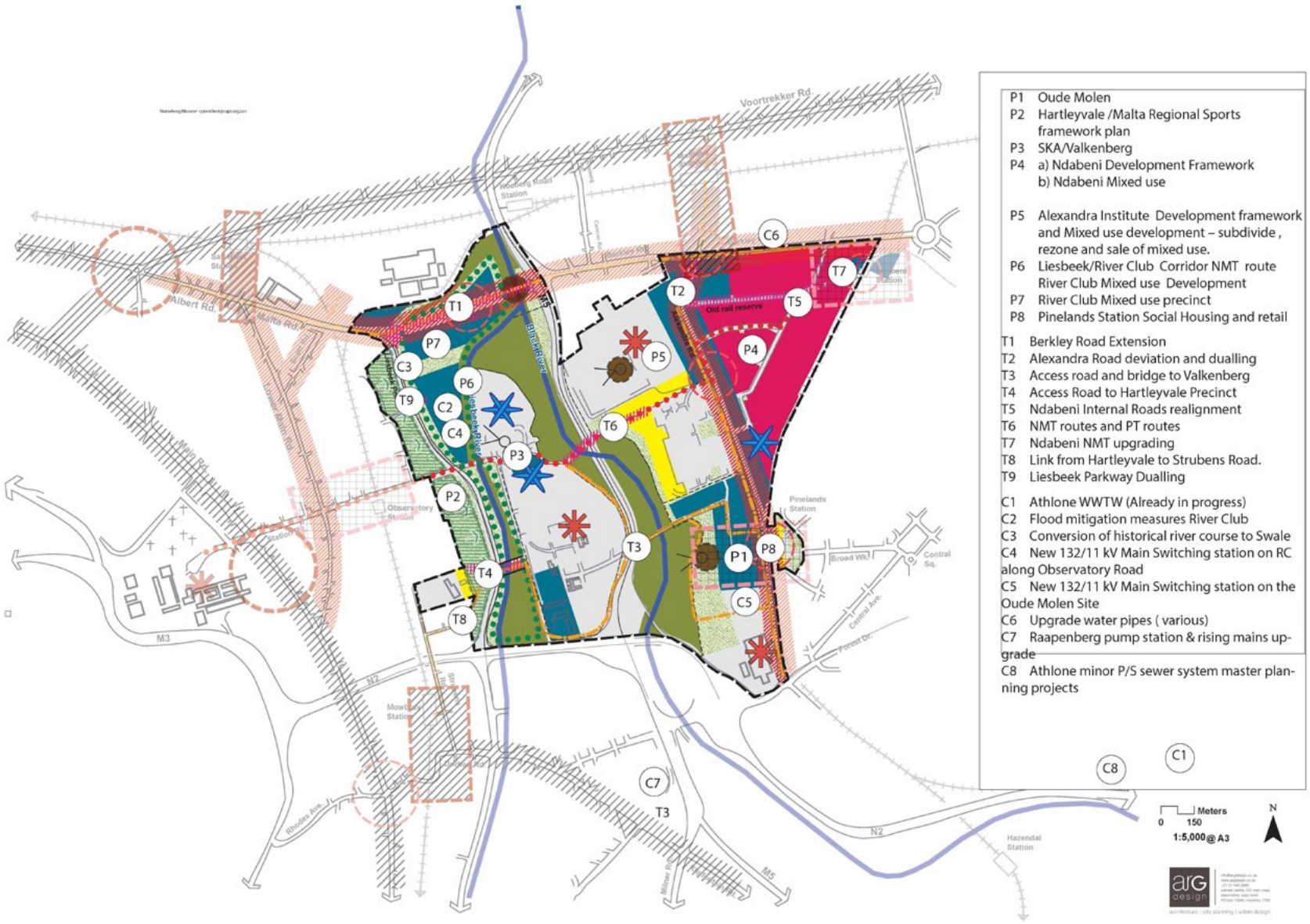


Figure 9.4. Combined projects

9.1. Possible job creation estimates

The following table (Table 9.1) estimates the number of jobs to be created as a result of the proposed developments in the local area. This does not include the job creation from the services upgrades which will be additional to these numbers.

Job creation numbers were estimated using industry standardised trade densities to determine the commercialisation cost by land use. Jobs were calculated through using the equivalent typical space requirements by occupation. These numbers are subject to change once detailed planning at precinct level is finalised.(Urban-econ).

Table 9.1. High level estimated job creation for proposed developments at Two Rivers

Land Use	Estimated jobs during operation	Estimated GLA (m^2) based on high level assumptions regarding areas.(To be confirmed during detailed planning).
Smaller housing units @ 40m^2/unit		244 717
Open market housing units @ 65m^2/unit	718	186 558
Commercial	4373	279926
Office	2550	163215
Industrial	4704	470447
Community facility	78	4704
School	450	27009
Sports	2259	135559
FINA swimming pool	12	15000
Total	**±15066**	

10. Monitoring, evaluation and review.

Aspects	Evaluation	Monitoring
Purpose	"Accountability, information, improvement of the design and implementation of the plan	"To ensure that what is planned and regulated is actually enforced
When it is performed Who performs it	Before, during, and after implementation of plan External or internal evaluators	During implementation of the plan" Team in charge of the plan: Spatial Planning and Environment Department at CoCT
Content of the process	Assess relevance, usefulness, effectiveness"	Measure the performance and results"
Aim of the process Notion of public action "	Assess the adequacy of the plan Allows questioning of the plan	Correct deviations Does not question the plan

10.1. Monitoring

The monitoring of the plan can be measured against the implementation framework which specifies time frames and responsibilities for implementation of actions. The Department responsible for monitoring the plan is the Spatial Planning Department

10.2. Evaluation

Evaluation can be understood as any process to assess the adequacy of the plan. Evaluation includes the public participation process to be undertaken. The following process to be undertaken in the evaluation and finalisation of the plan:

1. Distribution for comment to City of Cape Town Departments- Mid February-Mid March 2019.

Incorporate comments and make amendments to plan -August 2019.

Distribute for comment to core client evaluation team- September 2019.

Incorporate comments and prepare for public engagement.

Publish for comment by General Public and stakeholders October- Nov 2019.

Incorporate comments and finalise LSDF February 2019.

Send to Council for adoption March 2019

13 Process for drafting or amending a district spatial development framework or a local spatial development framework

(1) If the City intends to adopt a district spatial development framework or a local spatial development framework, the City must –

(a) specify the geographic area concerned; and

(b) approve the drafting of a district spatial development framework or a local spatial development framework as the case may be.

(3) The Department must provide a written report that must at least–

(a) describe the manner in which –

(i) the draft district spatial development framework or draft amendment thereof aligns to the municipal spatial development framework and relevant provisions of strategies adopted by the Municipal Council; or

(ii) the draft local spatial development framework or draft amendment thereof aligns to the municipal spatial development framework, the relevant district spatial-development framework and relevant provisions of strategies adopted by the Municipal Council; as the case may be;

(b) summarise the process of drafting the district spatial development framework, local spatial development framework or amendment;

(c) summarise the consultation process;

(d) set out the City's responses to the comments received; and

(e) recommend the adoption of the draft district spatial development

framework, draft local spatial development framework or draft amendment.
14 Decision on the adoption or amendment of a district spatial development framework or a local spatial development framework
The Municipal Council may –
(a) accept the report envisaged in section 13(3) and adopt the draft district spatial development framework, draft local spatial development framework or draft amendment, with or without a condition;
(b) refer the report envisaged in section 13(3) back for further specified information and/or further specified consultation; or
City of Cape Town Municipal Planning By-Law, 2015 (not official version – only for departmental use)
(c) refuse to adopt the draft district spatial development framework, draft local spatial development framework or draft amendment.
Within 30 days of adopting or amending a district spatial development framework or a local spatial development framework, the City must publish the adopted or amended district spatial development framework or local spatial development framework on the City's website.

10.3. Review

An annual review process is contemplated in section 34(a) of the Municipal Systems Act.

In the City of Cape Town , Municipal Planning Bylaw, 2015 amended, in terms of S17 Review of a local spatial development framework
(1) The City must review a district spatial development framework or a local spatial development framework or structure plan at least **every 10 years.**
(2) The City Manager must give notice in the media in accordance with section 21 of the Municipal Systems Act of the City's intention to review a district spatial development framework or a local spatial development framework and give details of the person to whom and the date by which any comments or suggestions to be taken into account in the review process, must be submitted.
(3) When conducting a review for the purposes of subsection (1), the City must consider at least –
(a) the record of deviations from the district spatial development framework or local spatial development framework and the reasons for the deviations;
(b) any relevant amendments to the municipal spatial development framework;
(c) the requirements of provincial and national legislation relating to the municipal spatial development framework;
(d) relevant provisions of strategies adopted by the Municipal Council; and
(e) comments received in the review process.

Annexure A

Drafting process followed

In terms of section 12 (of Part 3) of the Cape Town Municipal Planning By-Law (2015), the following provisions apply:

(1) The Municipal Council may adopt a local spatial development framework for a specified geographic area within the geographical area of the City.

(2) A local spatial development framework must align with and give further effect to the municipal spatial development framework and any relevant district spatial development framework by providing more detailed, local planning.

(3) Where relevant, a local spatial development framework may contain the elements envisaged in sections 11(2)(a) to 11(2)(e).

(4) A local spatial development framework may include an implementation plan which must among other things inform and guide the actions aimed at realising proposals of the local spatial development framework.

In terms of section 13 (of Part 3) of the Cape Town Municipal Planning By-Law (2015), the following provisions apply:

(1) If the City intends to adopt a district spatial development framework or a local spatial development framework, the City must –

(a) specify the geographic area concerned; and

(b) approve the drafting of a district spatial development framework or a local spatial development framework as the case may be.

(2) The Department must provide a written report that must at least –

(a) describe the manner in which –

(ii) The draft local spatial development framework or draft amendment thereof aligns to the municipal spatial development framework, the relevant district spatial development framework and relevant provisions of strategies adopted by the Municipal Council, as the case may be

(b) summarise the process of drafting the district spatial development framework, local spatial development framework or amendment;

(c) summarise the consultation process;

(d) set out the City's responses to the comments received; and

(e) recommend the adoption of the draft district spatial development framework, draft local spatial development framework or draft amendment.

Annexure B

Consultation process followed

TO BE COMPLETED AFTER PUBLIC PARTICIPATION PROCESS