



**Western Cape
Government**

In partnership with the City of Cape Town

TWO RIVERS URBAN PARK Co Design Workshop

18 FEBRUARY 2017

Draft Green Corridor Concept Plan



Melanie Attwell
and Associates



FOCUS AREA



CONTEXTUAL ANALYSES

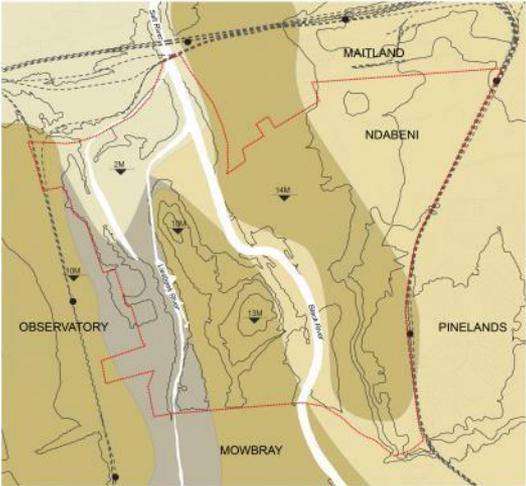
TRUP within Salt River Catchment

- TRUP Boundary
- - - Natural Catchment
- - - Reticulation Catchment
- Historic Estuarine Boundary
- Fish support area and associated sub-catchment
- Indigenous Vegetation Remnants
- Integrated drainage system**
 - Largely natural
 - Open channel
 - Culvert
 - Storm water pipe - main
 - Concrete lined canal
- Wetland antho types**
 - Natural, semi-natural wetlands
 - Stormwater pond
 - Stormwater depression
 - Dam
 - Quarry



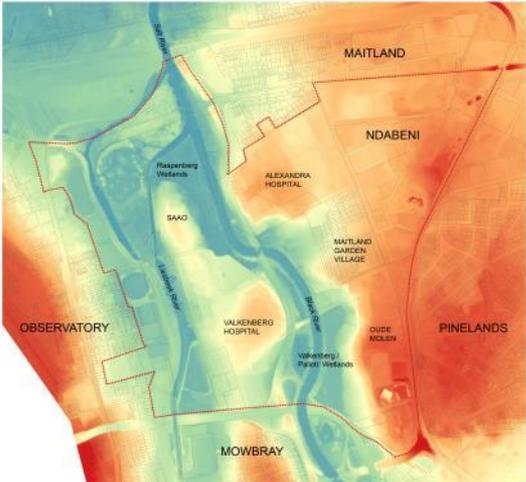
SITE ANALYSES

Geology and Topography



Reference: CoCT

Elevation



Reference: LIDar

Heritage



Reference: M. Attwell 2016

DESIGN INFORMANTS

Topographic + Spatial + Heritage

- Elevated plateaus - Greywacke, phyllite and quartzitic sandstone
- Land Parcels
- Areas with memorialisation potential**
- River Confluence, Migrational River Crossings
- Ridge Line
- Forced Removal History
- First Nation History

Structures and Areas to be Conserved

- Grade I site
- Buildings protected by s27 (PHS)
- Buildings to be conserved and context protected
- Historic green space not to be developed

Structures that may be demolished with HWC permission

- Grade IIIC structures
- Ungraded structures older than 60 years
- Potential heritage precincts

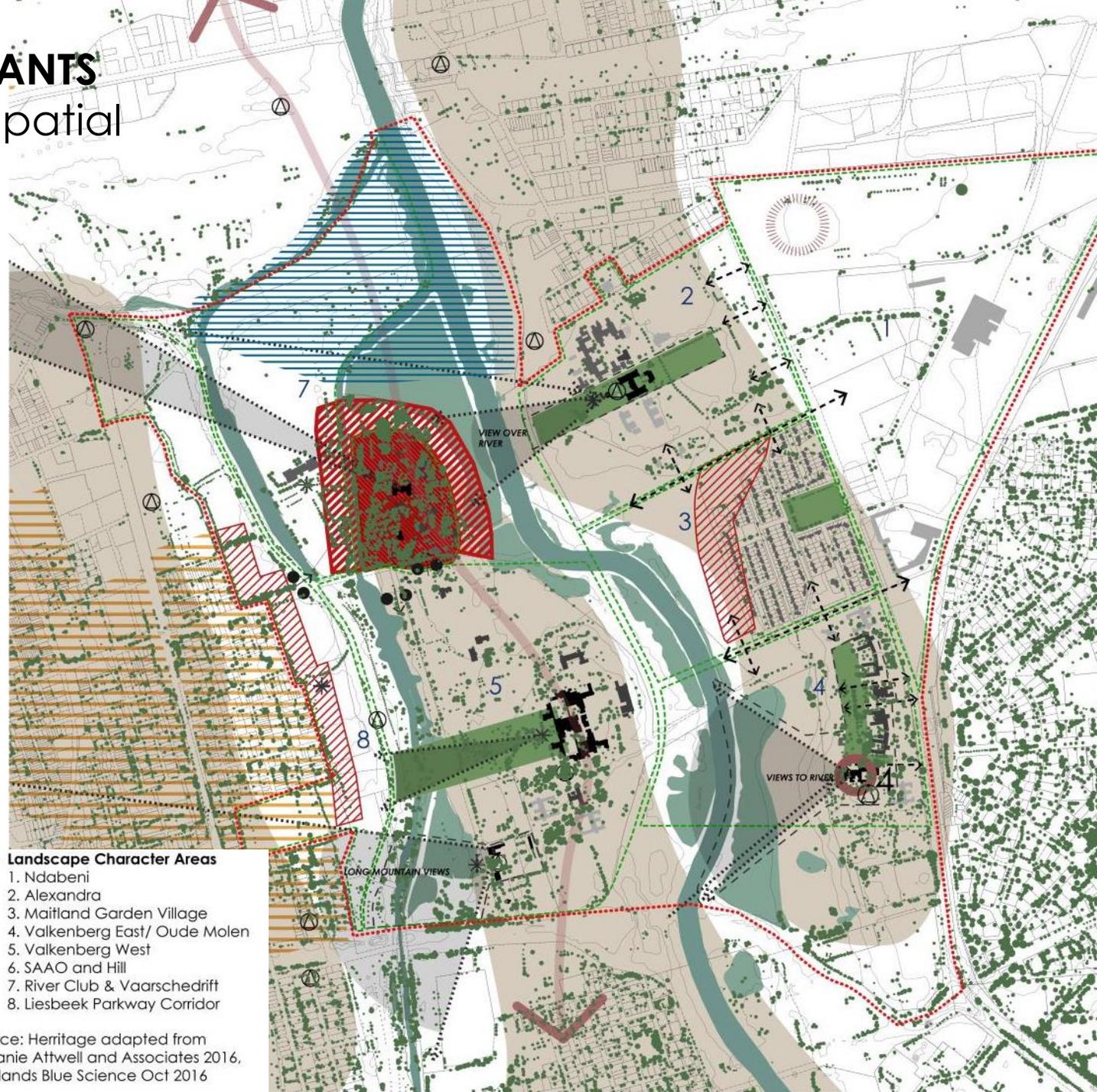
Local Heritage Protection

- Sites with historical archaeological potential
- Formally declared heritage protection overlay zones
- Green buffer zone/ development exclusion area
- Scaling mechanisms apply, potential height restrictions or landscaping
- Significant view cones
- Focal Points
- Gateway
- Permeable Edges

Landscape Character Areas

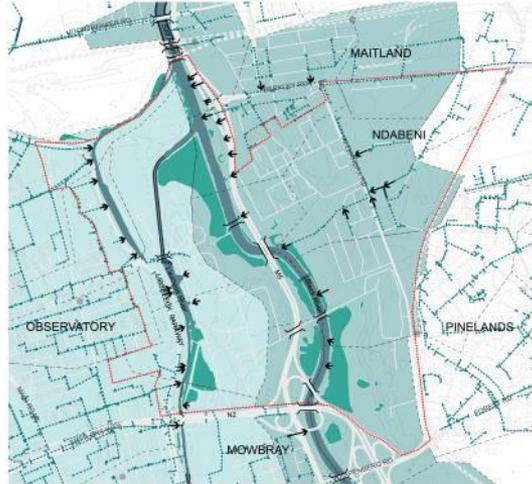
1. Ndabeni
2. Alexandra
3. Maitland Garden Village
4. Valkenberg East/ Oude Molen
5. Valkenberg West
6. SAO and Hill
7. River Club & Vaarschedrift
8. Liesbeek Parkway Corridor

Source: Heritage adapted from Melanie Attwell and Associates 2016, Wetlands Blue Science Oct 2016



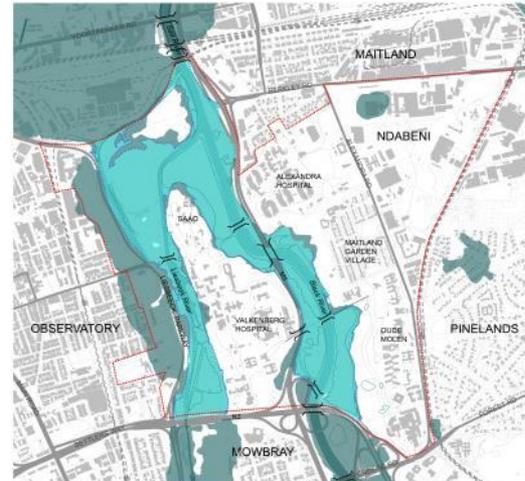
SITE ANALYSES

Storm water system



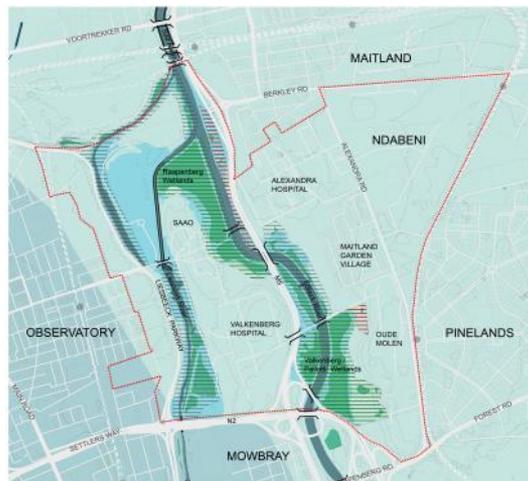
Reference: CoCT, Blue Science 2016

Flood lines



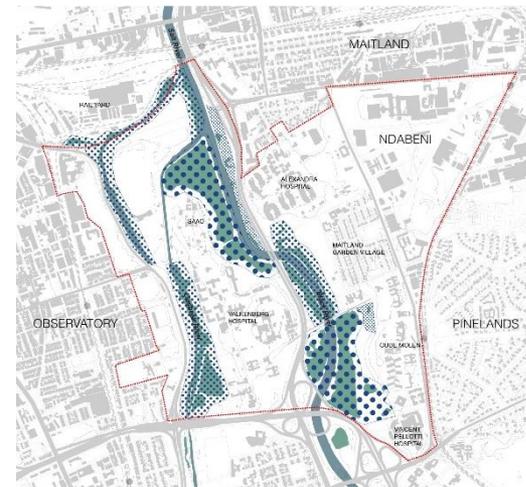
Reference: CoCT, RHDHV 2016

Hydrological system



Reference: CoCT, srk 2012, Blue Science 2016, RHDHV 2016

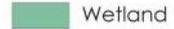
Freshwater sensitivity



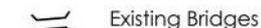
Reference: CoCT, Blue Science 2016

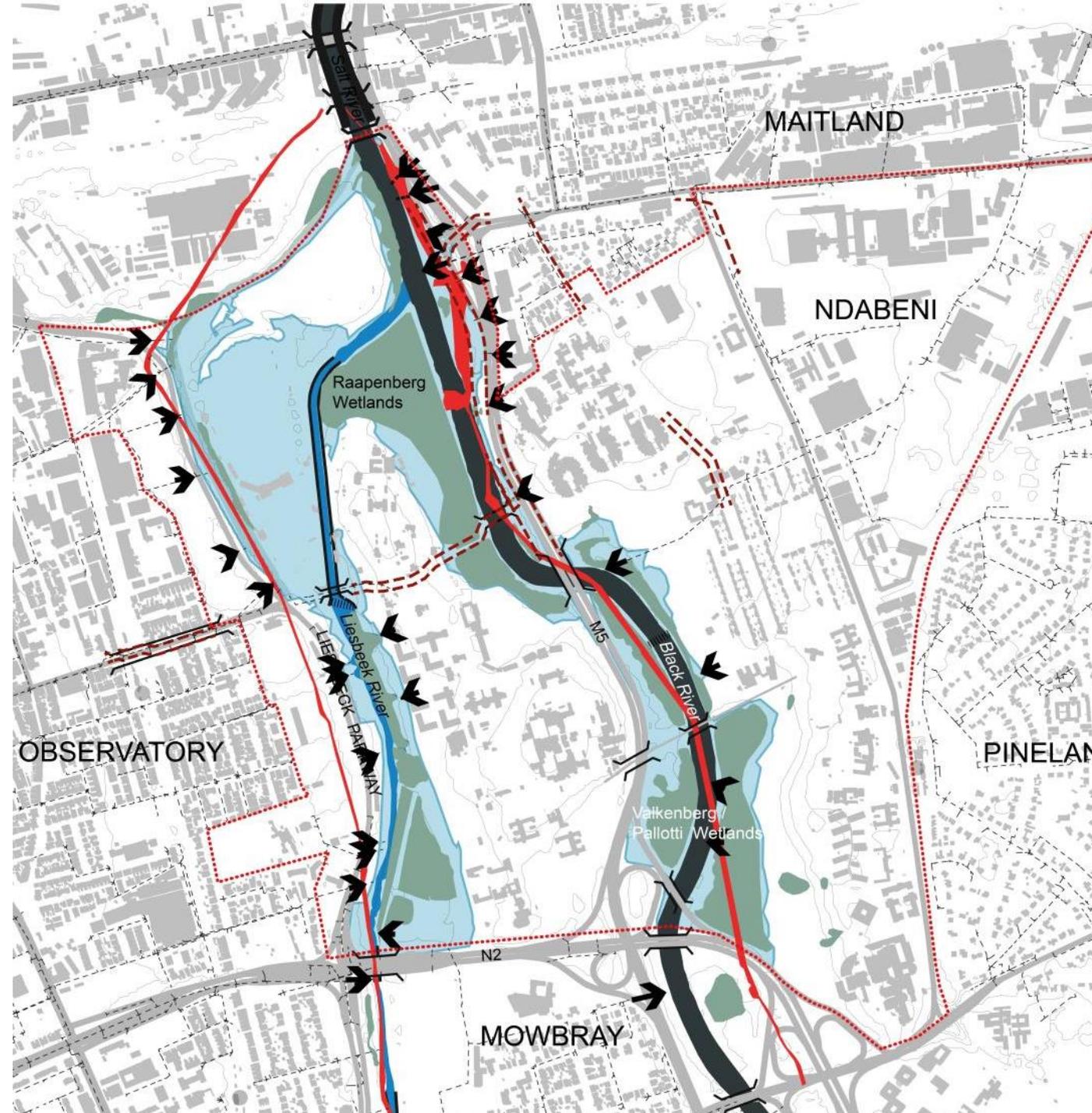
DESIGN INFORMANTS

Hydrology + Infrastructure

-  TRUP Boundary
-  Wetland
-  100 year flood extend (May 2016)
-  Concrete Lined Channel
-  Weir
-  Stormwater Pipes
-  Stormwater Inlet

- Rivers Present Ecological State
-  Class D: Largely Modified
-  Class E or F: Seriously/
critically modified
- Classification is not available for
the Old Liesbeek River Channel.

-  High Voltage Cable Buffer Zone
-  Liesbeek and Black Rivers in Arial
Photography from 1937
-  Existing Bridges



SITE ANALYSES

Botanical Sensitivity



Reference: N. Helme 2016

Faunal Sensitivity



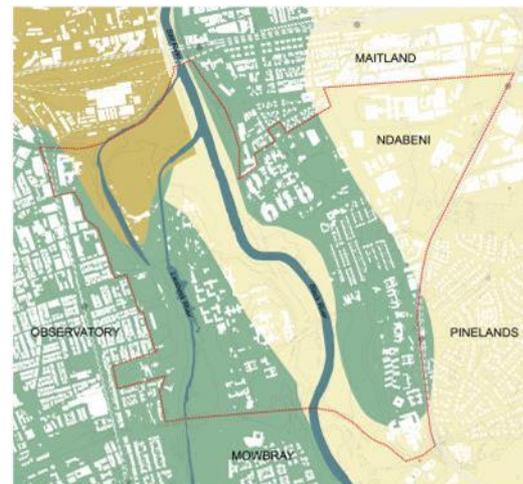
Reference: N. Helme 2016

Critical Biodiversity Areas



Reference: SANBI 2016

Vegetation Previously present on Site



Reference: CoCT

DESIGN INFORMANTS

Biodiversity

----- TRUP Boundary

Critical Biodiversity Area Category:

● CBA 1d

● OESA

● Other Natural Vegetation

Sources: Biodiversity Network for
CCT SANBI 2016

Botanical sensitivity

High

Medium

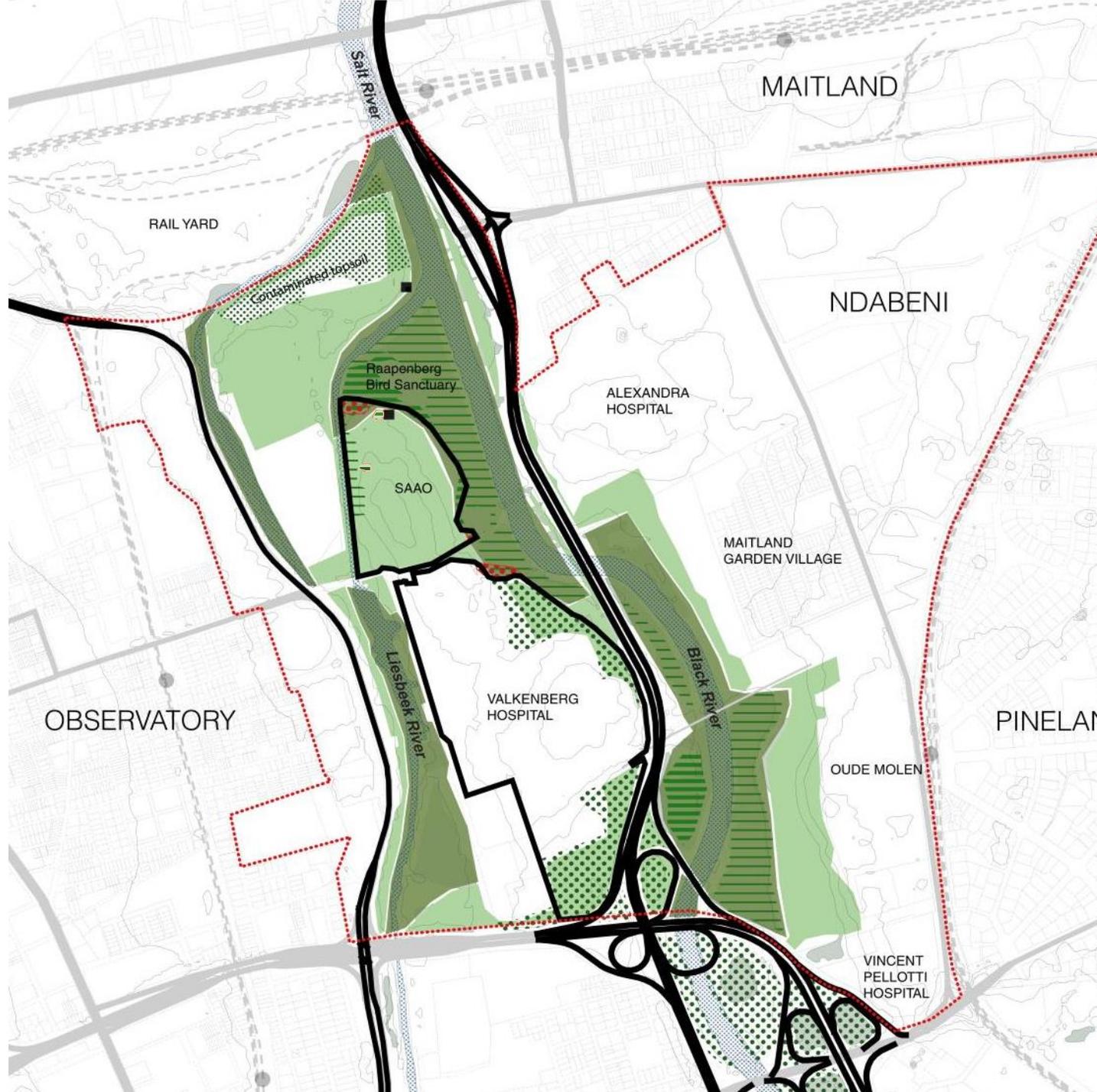
Faunal Sensitivity

High

Medium

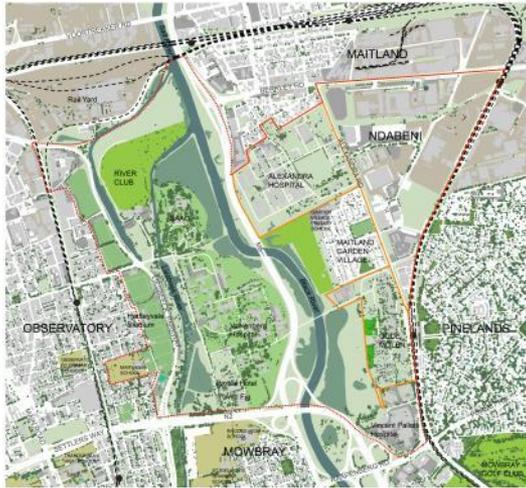
Source: Helme N. 2016

— East - West barriers



SITE ANALYSES

Open Space Categories



Access of Open Space



Biodiversity Agreement Areas

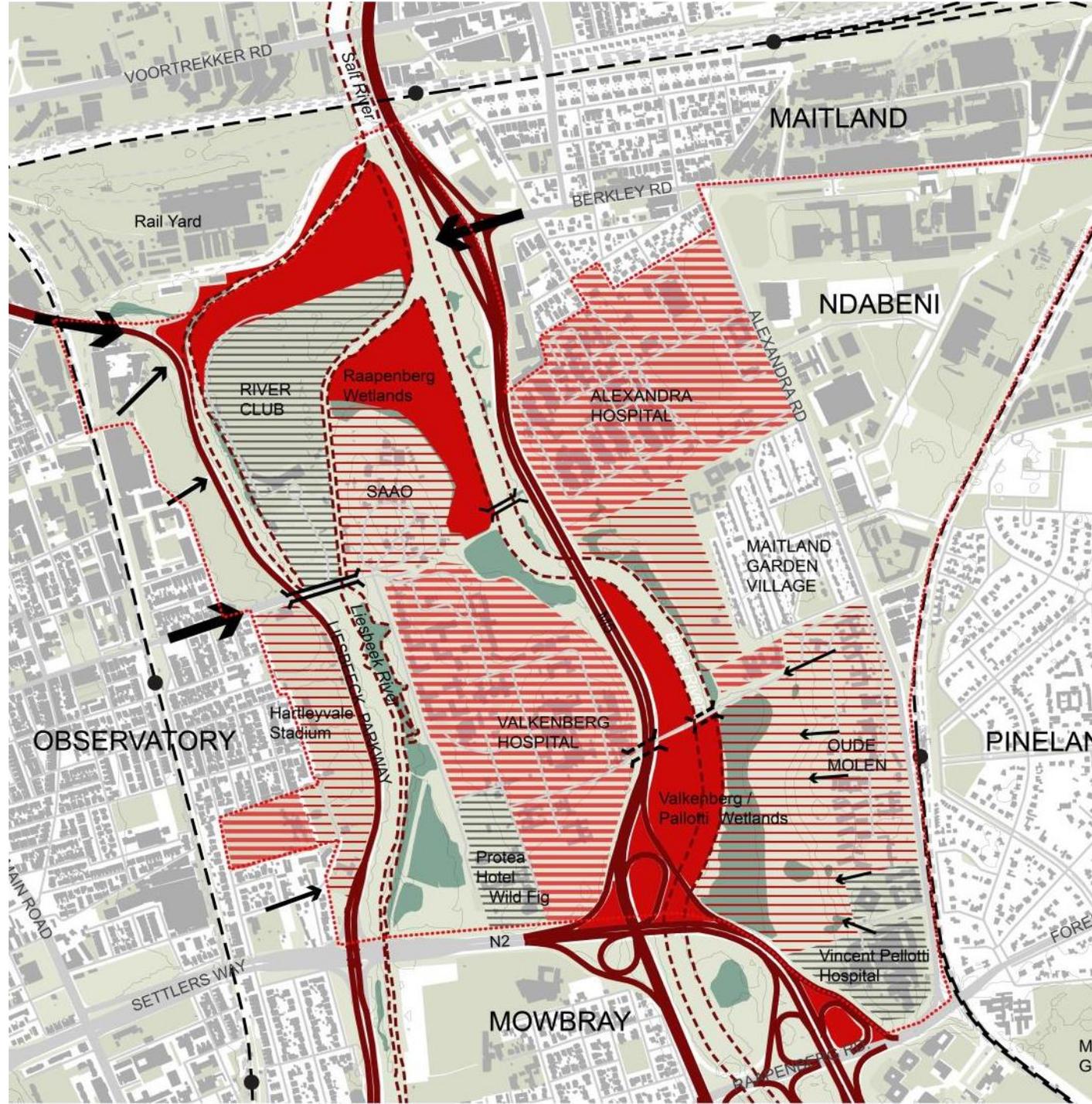


Reference: Cape Nature

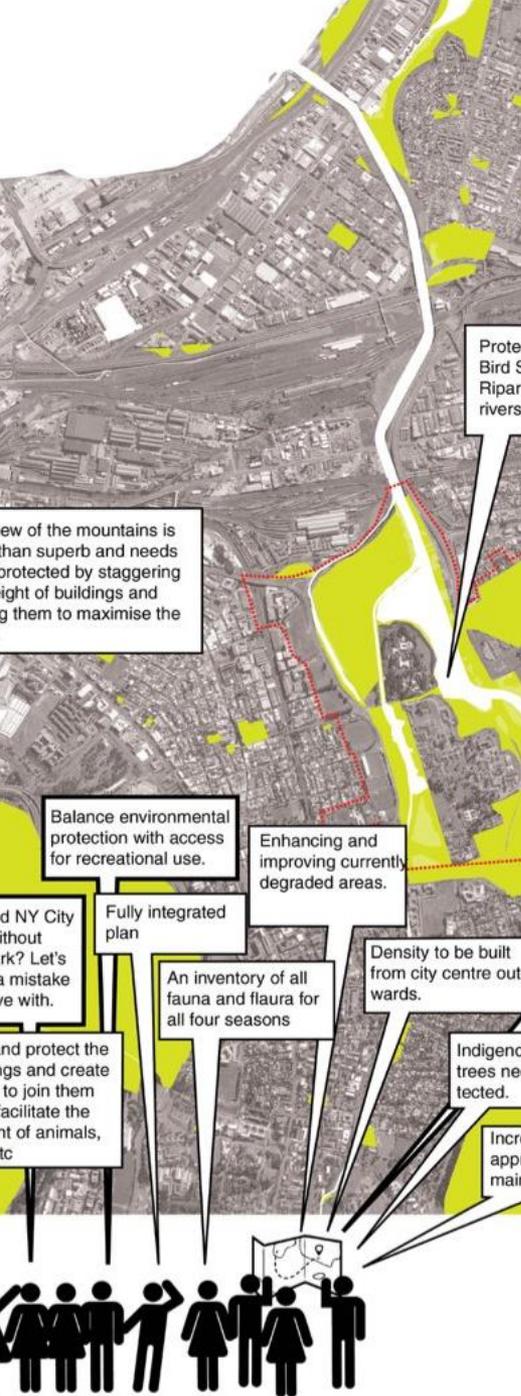
DESIGN INFORMANTS

Open Space + Accessibility

- TRUP Boundary
- Not Accessible
- Public Institution with Controlled Access
- Public Institution with Restricted Access
- Private Property
- Wetlands
- Road Barrier
- Steep River Edges as Barrier
- TRUP Boundary
- NMT free access river crossing
- NMT restricted access river crossing
- Access Points Road and Pedestrian
- Access Points only Pedestrian



TRU-Park is ..



- protecting the integrity of the ecological systems - green lung.
- enabling and enhancing bio-diversity corridors.
- enabling urban agriculture.
- balancing environmental and recreational uses.
- enhancing the perception and the experience of the landscape.
- cleaning the water of the rivers through a broader water purification strategy.
- enabling the wetlands.
- naturalizing the river courses.
- surveying and protecting fauna and flora.
- enabling recreational use of the rivers.
- protecting and enhancing the heritage landmarks and views.
- identifying spaces for ceremonies and rituals.
- celebrating the different cultural narratives associated with the site.
- a pedestrian and public transport based area [reduced car/no car].
- promoting the use of public transport [NMT and IRT network]
- providing strategic [NMT] pedestrian and cycle links and bridges
- re-introducing the bridge over Black river connecting MGV to Observatory.
- mitigating the impact of infrastructural and natural barriers across the site.
- an open public amenity accessible to all.
- activated by a wide variety of social infrastructure.
- ensuring the continued functioning of existing activities.
- extending to the sea and to Langa.
- including the development of Alexandra Rd as an 'activity street'.
- including the Maitland Garden Village in the development strategy.

DESIGN INFORMANTS

Public Participation

- TRUP Boundary
- No-go Area for Development
- Graded Sensitive Area
- Sensitive Zone
- Sensitive Area
- Heritage Structures
- Heritage Important Sites
- Heritage Important Views
- Table Mountain Views to be maintained
- Maintaining Green Open Space
- Berkley Road Extension
- Sources: Adapted from SUN Public Participation Workshops
- Proposed Crossing



Manifesto recognises the strategic location of TRUP its attributes and unique qualities that can help to “ **heal the city**”

TRU-Park has the potential to:

BECOME

Ecologically thriving landscape, celebrating its rich cultural diversity

PROVIDE

Opportunities that re-address the socio-spatial legacy of apartheid

3 GUIDING DESIGN
PRINCIPLES RESULTING
FROM INTERPRETATIVE
MAPPING:

CONSERVE

**CONNECT/
ACCESS**

ACTIVATE

TRU-Park MANIFESTO

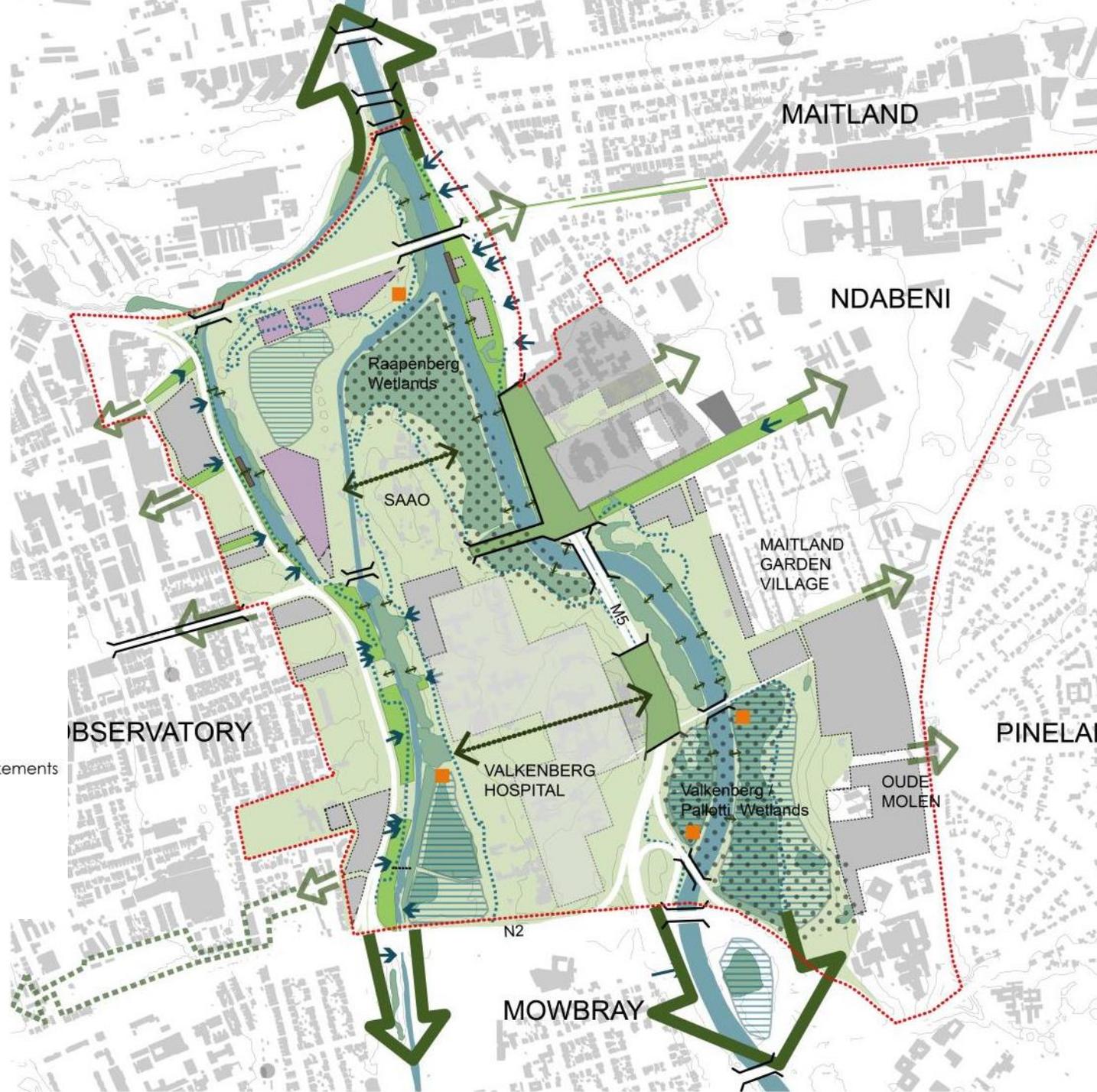
- 1 Metropolitan Park**
- 2 Ecological integrity**
- 3 Sustainable environmental approach**
- 4 Sustainable modes of transport**
- 5 Mixed-use, mixed tenure urban environment**
- 6 Funding and local economic opportunities**
- 7 Clear management, administrative and institutional systems**
- 8 Integrative space**
- 9 Inclusive social partnership**
- 10 Alternative systems of technology**

CONCEPT Hydrology and Biodiversity

-  TRUP Boundary
-  Stormwater Inlet
-  100 Year Flood Line
-  Stormwater Detention and Treatment
-  Flood Storage Areas
-  Other Open Space
-  Wetlands

-  Main Rehabilitation Areas
-  Bridge
-  Biodiversity Linkeages - Green Bridge
-  Biodiversity Linkeages Thruh Fences
-  Biodiversity Linkeages - stepped embankments
-  Biodiversity Corridors
-  Docking station
-  Bird Hide

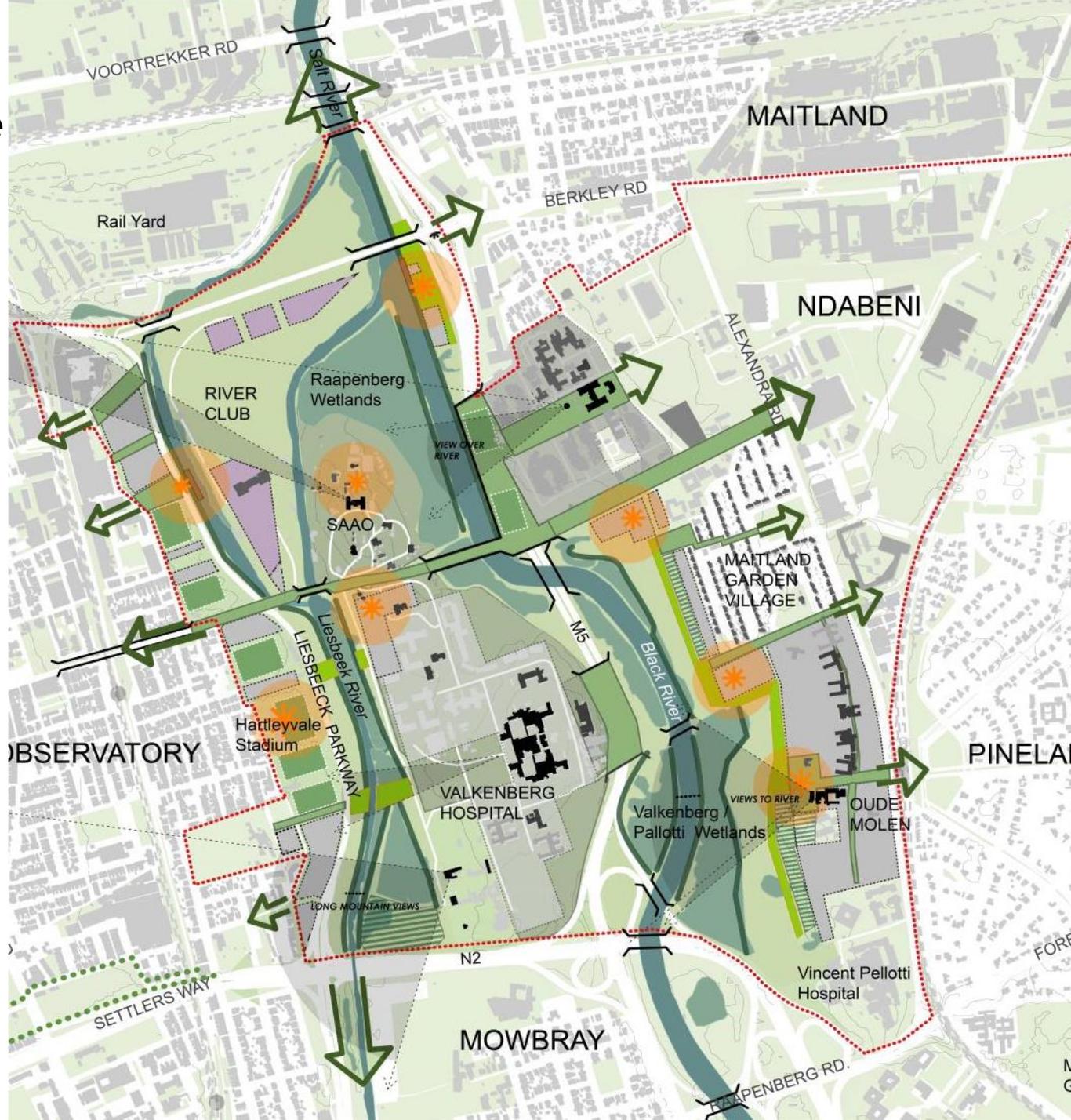
-  Proposed Development
-  Long-term Proposed Development
-  Development Private Land



CONCEPT

Active and Passive Open Space

- ⋯ TRUP Boundary
- Sportfields
- Meadow and Grassy Embankments
- Active Recreation Areas
- Main Green Connections
- Other Open Space
- Wetlands
- Agriculture
- Green Bridge
- Institutional Gardens
- Main contact zones with water bodies
- Main open space connections with the surrounding
- Docking station
- ✳ Cultural and Social Key Destinations
- Heritage Structures



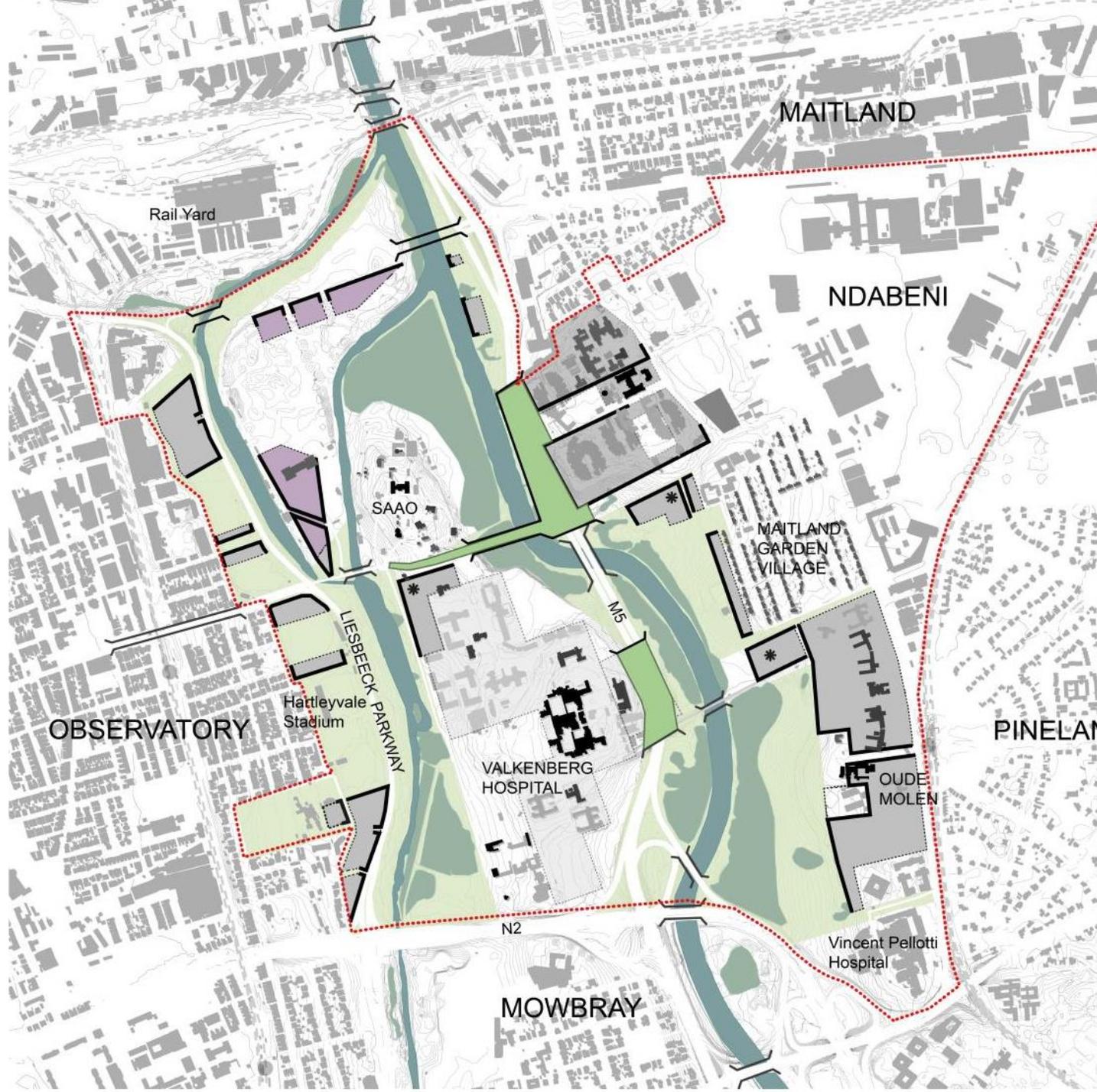
CONCEPT Accessibility

- TRUP Boundary
- Proposed Development
- Long-term Proposed Development
- Development Private Land
- Green Corridor
- Wetlands
- Bridge
- Green Bridge
- PRT
- NMT
- Pedestrian
- River Crossing (Boardwalk)
- River Crossing (Stepping Stones)
- Main Access Points



CONCEPT Edges

- TRUP Boundary
- Active edge
- Proposed Development
- Long-term Proposed Development
- Development Private Land
- Green Corridor
- Wetlands
- Bridge
- Green Bridge
- Heritage Structures



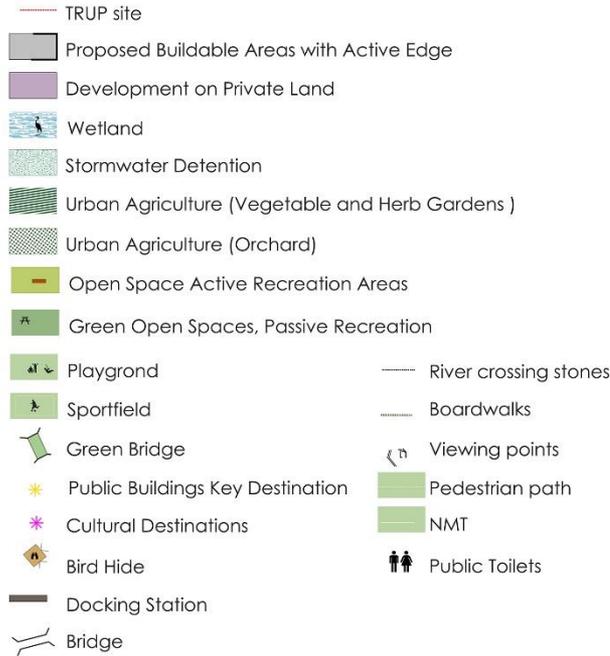
DRAFT LANDSCAPE PROPOSAL

Disclaimer:
Content relies on information furnished to us as at November 2016. This work is presented in draft format and subject to revision and/or amendment that is dependent on further information/comments/ground truthing to be obtained from referenced sources and /or relevant authorities.



- | | |
|--|--|
|  TRUP site |  Green Bridge |
|  Proposed Development Footprint with Active Edge |  Public Buildings Key Destination |
|  Development on Private Land |  Cultural Destinations |
|  Wetland |  Bird Hide |
|  Stormwater Detention |  Docking Station |
|  Urban Agriculture (Vegetable and Herb Gardens) | |
|  Urban Agriculture (Orchard) | |
|  Open Space Active Recreation Areas | |

Liesbeek River North of Station Road



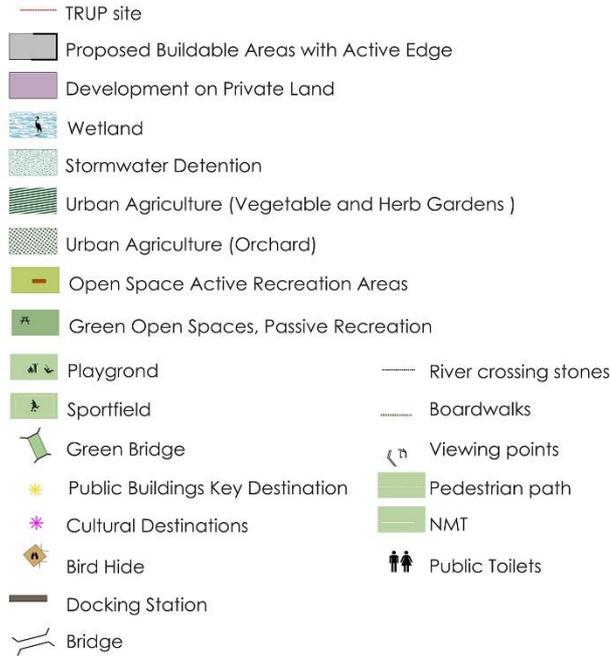
MAIN ELEMENTS FOR FURTHER INVESTIGATION:

Proposed development within the edges of the Sports Fields would require further investigation in respect of type of development and Storm Water drainage.

Reconnecting Liesbeek River and the Old Arm and its recreational potential.



Liesbeek River South of Station Road



MAIN ELEMENTS FOR FURTHER INVESTIGATION:

Proposed development within the edges of the Sports Fields would require further investigation in respect of type of housing and Storm Water drainage.

Proposed orchard reconsider as wetland or grass land.



Black River Alexandra Hospital Area

-  TRUP site
-  Proposed Buildable Areas with Active Edge
-  Development on Private Land
-  Wetland
-  Stormwater Detention
-  Urban Agriculture (Vegetable and Herb Gardens)
-  Urban Agriculture (Orchard)
-  Open Space Active Recreation Areas
-  Green Open Spaces, Passive Recreation
-  Playground
-  Sportfield
-  Green Bridge
-  Public Buildings Key Destination
-  Cultural Destinations
-  Bird Hide
-  Docking Station
-  River crossing stones
-  Boardwalks
-  Viewing points
-  Pedestrian path
-  NMT
-  Public Toilets

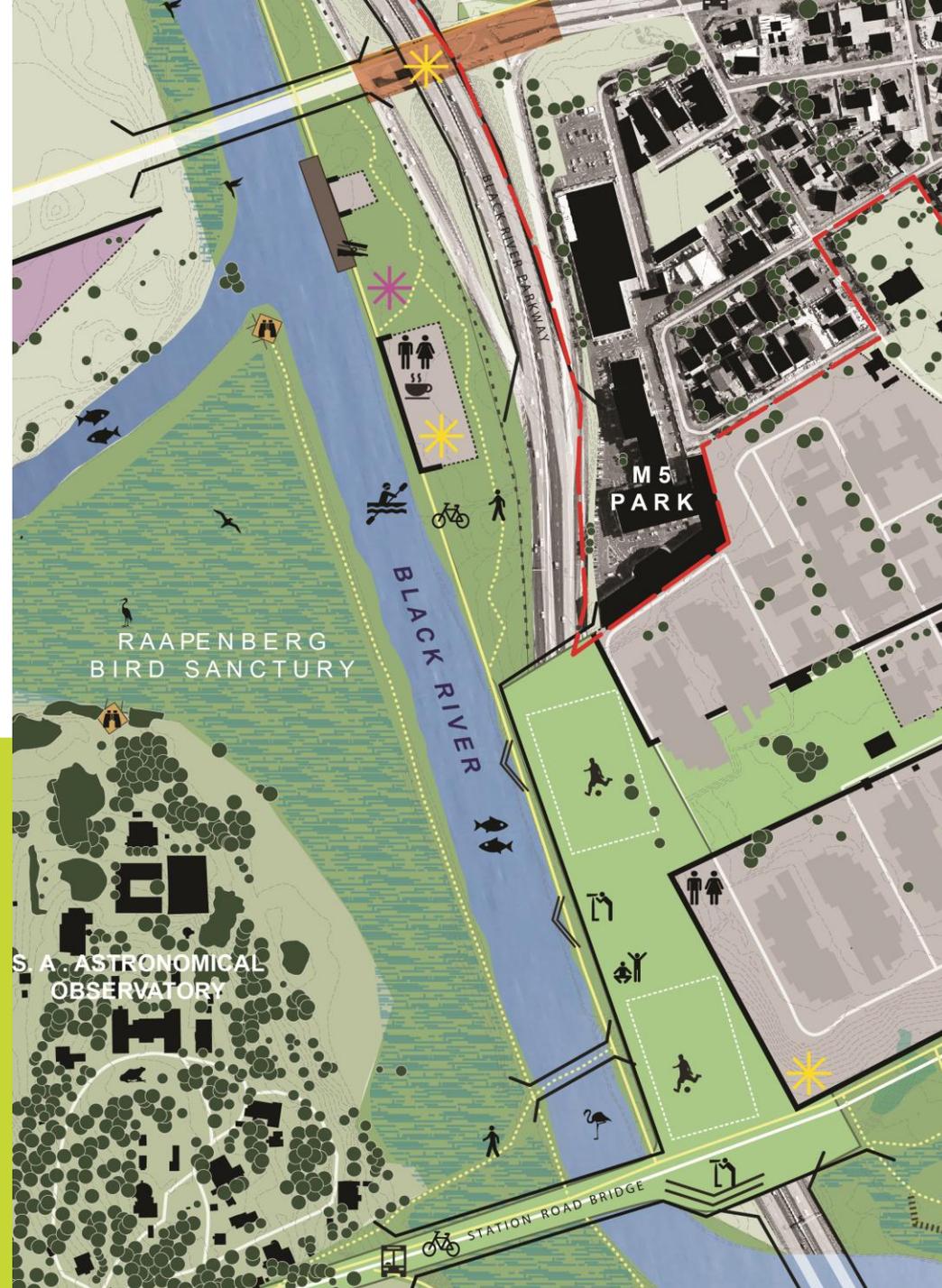
MAIN ELEMENTS FOR FURTHER INVESTIGATION:

The **extension of Station Road** over the Black River and the M5 traverses over a portion of the Raapenberg Wetland.

First Nation celebratory intervention at the convergence of the Liesbeek and Black Rivers.

Pathway between the Raapenberg Wetland and the Black River.

Docking station location and extend.



Black River Maitland Garden Village

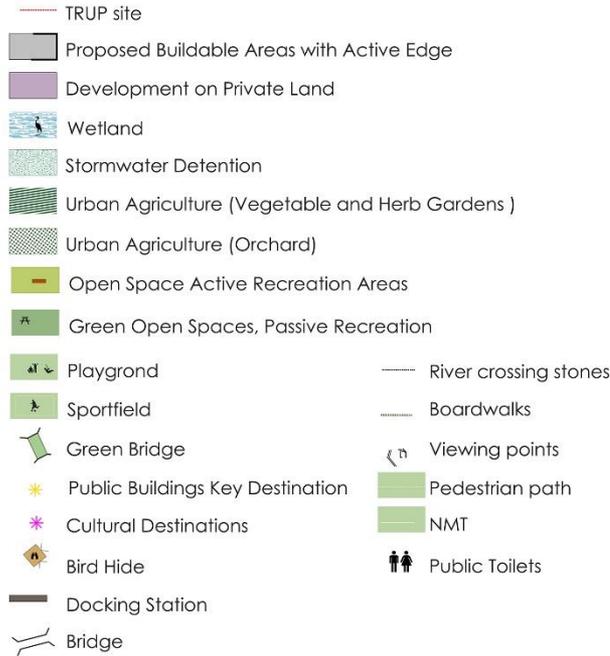


MAIN ELEMENTS FOR FURTHER INVESTIGATION:

Nodal development and potential flood alleviation pond below Maitland Garden Village occurs in the vicinity of a wetland identified by the Fresh Water Specialist Study as 'Fresh water Features of medium Sensitivity'.
Pathways - extend and position



Black River Oude Molen Area



MAIN ELEMENTS FOR FURTHER INVESTIGATION:

Berms as visual screening of the M5.

Flood storage area below Oude Molen.

Pathways - extend and position



Green Bridges Precedents



Wildlife Bridge (Netherlands)



High Line (NYC)

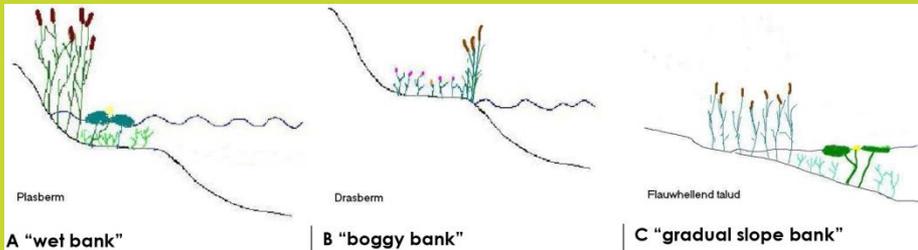


Urban Green Bridge (London)



ELEMENTS THAT REQUIRE FURTHER INVESTIGATION:

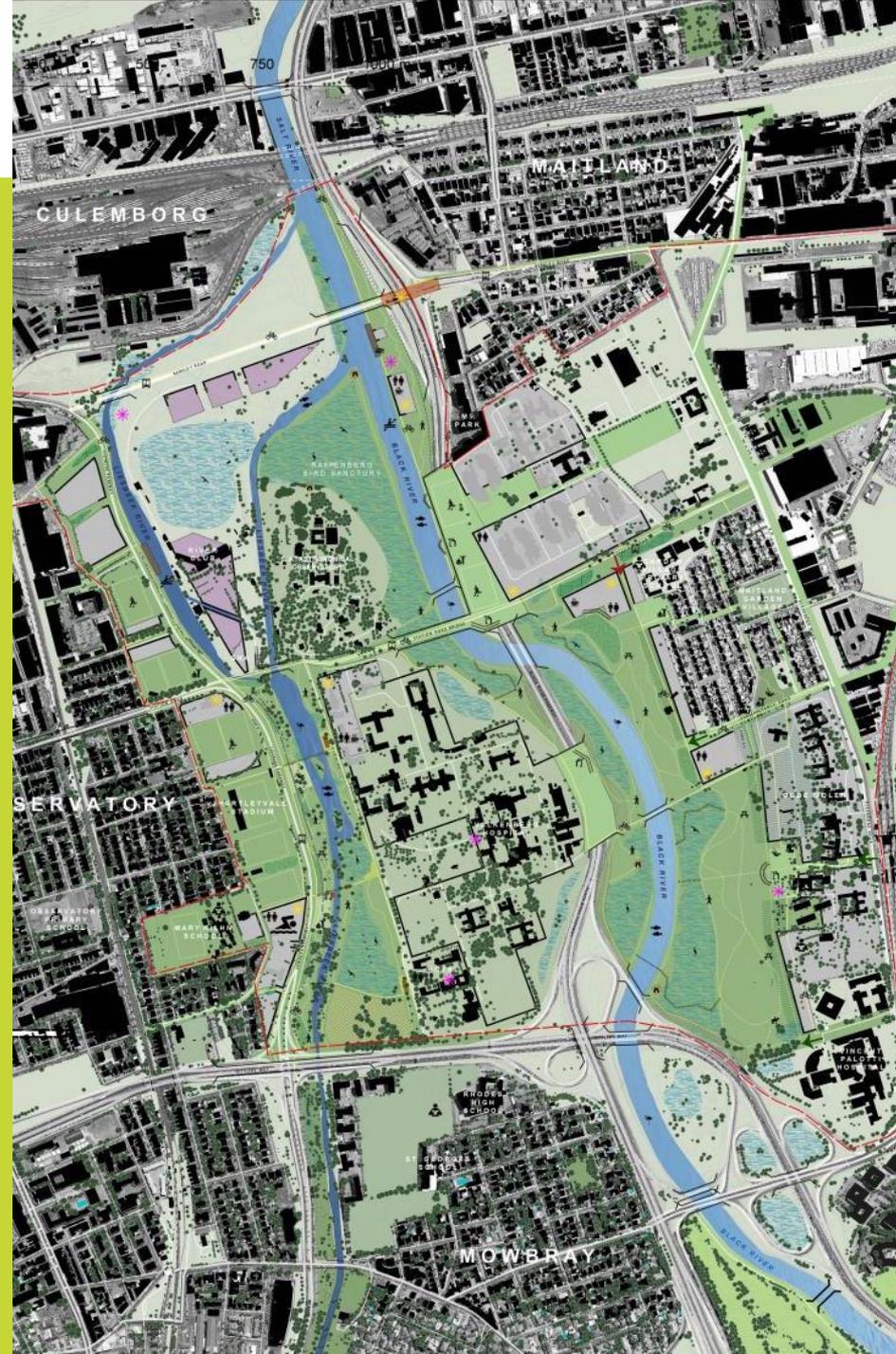
Careful consideration, with an accurate **audit of the wildlife within the river corridors** will be required before ameliorating and improving the river edge embankments.



Types of nature friendly banks, Source: RHDHV, Watercourse Management and Creating a Docking/Waterfront Feature, 2016, p 76.

All proposed interventions, **memorial, educational, spiritual or recreational** will require careful consideration in respect of their positioning, character and ecological and social implications.

Location of additional river crossings in Liesbeek and Black River need to be reconsidered.



WATER QUALITY AND QUANTITY AS A PRIMARY CONSTRAIN

Impact on Recreation:

- The current **City of Cape Town's policy** is that swimming in fresh surface waters should be avoided (Verbal input River Study Workgroup meeting 2 on 5 May 2016).
- The **E.coli limit for contact recreation**, which is about 400 counts/100 ml in South Africa (DWAF, 1996a) is regularly transgressed.
- Both **Vygekraal and Elsieskraal have similar high E.coli counts**. No clear seasonal pattern can be recognised.
- **Other pollutants** which are not being monitored could also be a problem (pesticides, heavy metals), but are not the major part to be addressed by the options considered.

Quality Impact on Recreation:

- Indirectly, the recreational use is also influenced by the **ecological functioning** of the river.
- The **oxygen saturation levels** are fluctuating with lowest levels in the summer months, often less than 30%. Oxygen saturation should ideally be at least 80% for good ecological functioning (DWAFC, 1996).
- The **Athlone WWTW has a positive influence on eutrophication levels**; upstream of the WWTW water quality is worse than elsewhere along the river.

Source: RHDHV, 2016: Water Management and Creating a Docking/Waterfront Feature

Thank you