Western Cape Government

In partnership with the City of Cape Town

TWO RIVERS URBAN PARK

May 2016

Contextual Informants

Setting the Scene (2)

nm & associates planners and designers

TK LA

Sun

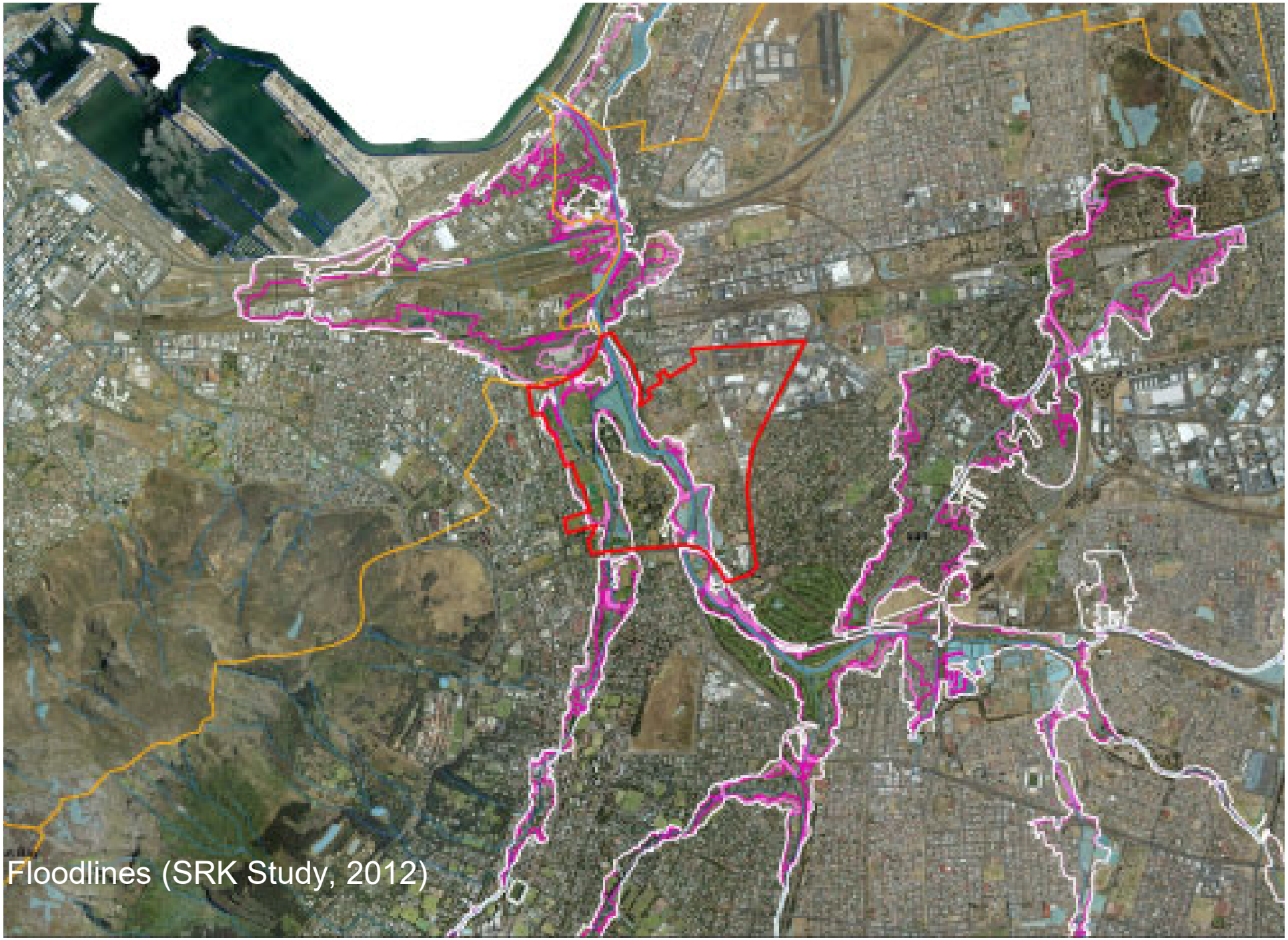
VIRULY CONSULTING

Royal HaskoningDHV Enhancing Society Together

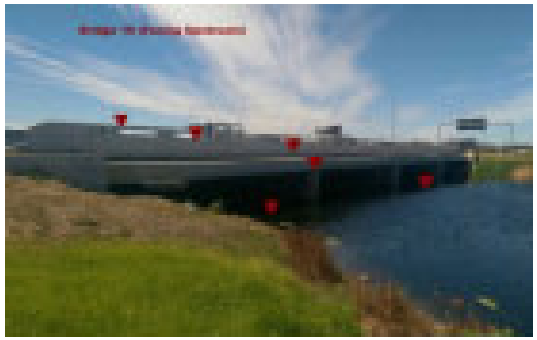
Melanie Attwell and Associates

Lucien Le Grange Architects and Urban Planners

Hydrology


Floodlines (SRK Study, 2012)

Modelling of Flood Mitigation Options



M5 crossing the Black River

First rail bridge crossing Salt River

Flood modelling - model using updated LIDAR and new survey data

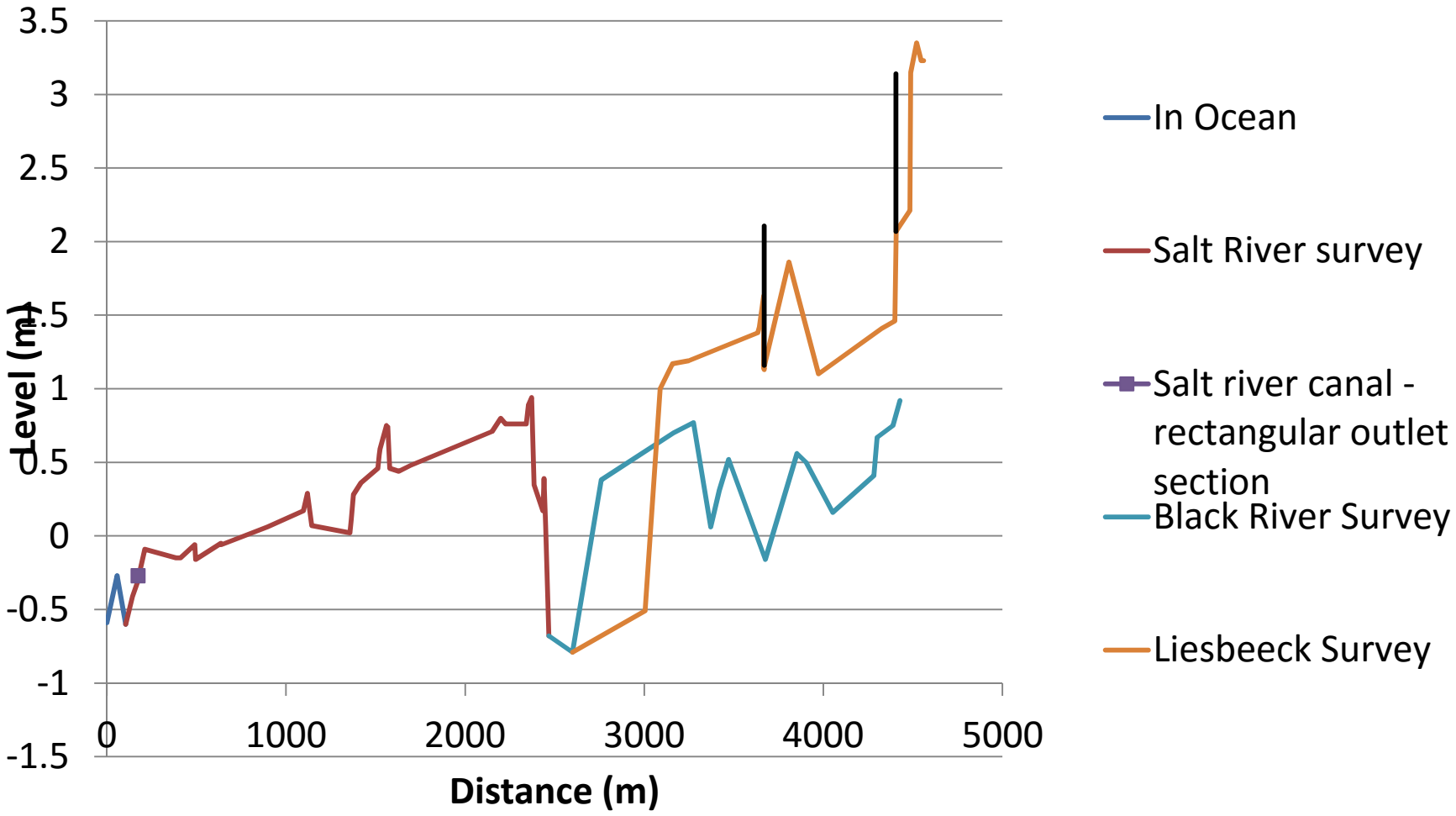
Provisional findings are as follows:

- The bottom of the Salt River canal at the first rail bridge is more than a meter higher than the bottom of the lower end of the Black River in the site.
- The bottom of the site is below sea level (-0.7 to -0.8 m).
- Salt River Canal is the bottle neck. The site is the backwater. Storage capacity within the site is therefore critical
- Rail bridges along Salt River also constrain high volume flows
- The N2 Settlers way functions as an obstacle for flood water in the beginning of the flood on the Black River side
- If rain falls evenly over the catchment - Liesbeek floods earlier than the Black River
- Redirecting the outflow from the WWTW's will not help to solve flooding; amounts are less than 1% of 1:50 year floods.

Modelling of Flood Mitigation Options

Current weirs and bridges – subject of survey

Modelling of Flood Mitigation Options



River Channel Geometry

Environment

Water source, flows and quality

River water sources from overland stormwater and WWTW's

Water flows:

- Liesbeek comprised of seasonal and perennial streams
- Black River was previously seasonal - now perennial system (WWTW's)
- Salt River does not allow tidal flushing – no estuary condition anymore

Water quality is challenging due to size of Catchment. Pollution coming from:

- Agricultural areas and Industrial areas
- Underserviced areas
- Cemeteries and golf courses
- WWTW's

Water source, flows and quality cont.

DWA, 2005 Ecological State of riperian corridors assessment: measured by state of habitat integrity, vegetation, fish, composition of invertebrates and water quality – different ratings of rivers in the catchment

City of Cape Town: Environmental Water quality index findings:

- Liesbeek River generally better condition than Black River
- Liesbeek River: slight deterioration / slight improvement in parts
- Black River: Upstream of site – Eutrophication resulting in growth of algae. AWWTW's has a limited dilution role.

Biological Analysis (faecal coliform levels):

- Recommended limit for recreational use = <400 counts / 100ml
- Black River and Liesbeek river not meeting standards
- WWTW's and Elsieskraal inflow diluting the E.coli in Black River upstream of site

Biodiversity

Catchment includes:

- Protected areas: TMNP, Tygerberg Nature Reserve and Rietvlei Reserve
- A number of small critical biodiversity areas (CBA's)
- Raapenberg Bird Sanctuary and a fish sanctuary

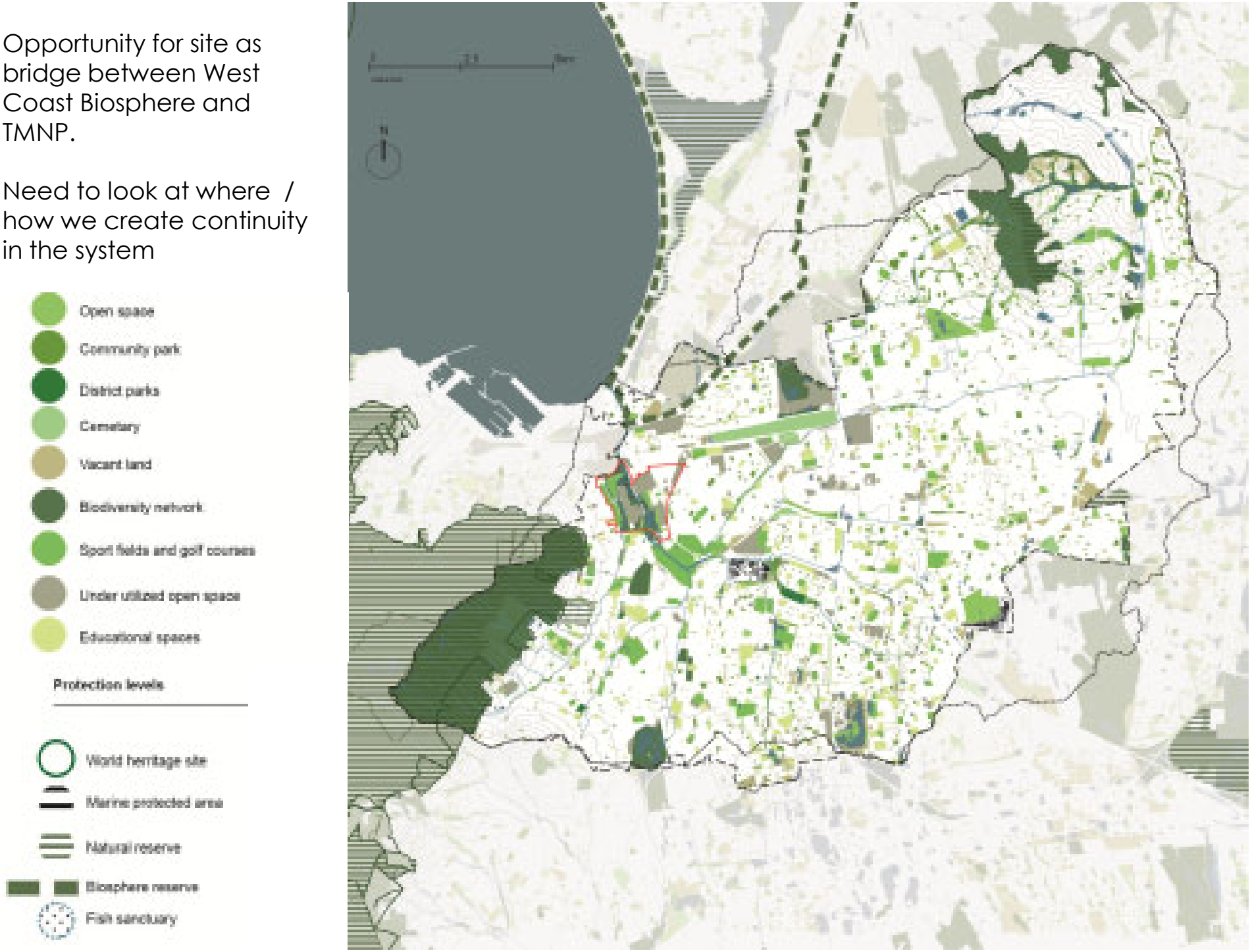
Highly fragmented nature of habitats due to construction of infrastructure over time, pollution of rivers, transformation of river course BUT still pockets of high biodiversity value

Moving forward:

- Room to improve current hydrological and ecological functioning of some wetlands,
- Create corridors at metro level
- Acknowledge and strengthen the sense of place

Opportunity for site as bridge between West Coast Biosphere and TMNP.

Need to look at where / how we create continuity in the system

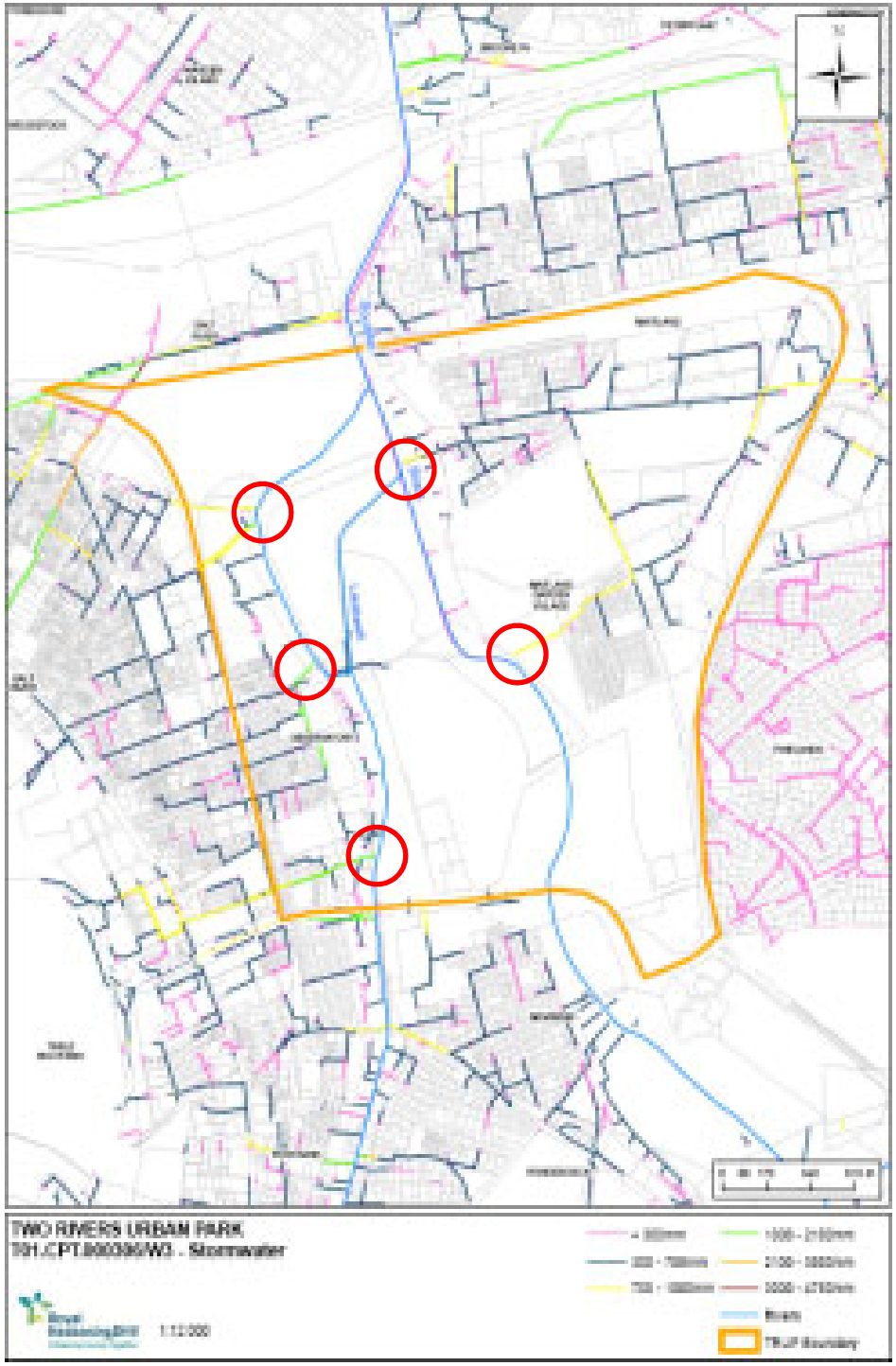


Green open spaces in the sub district present opportunity to grow the green open space network and look for biodiversity corridors

Maximising on overlap between "semi-natural" river with indigenous remnants

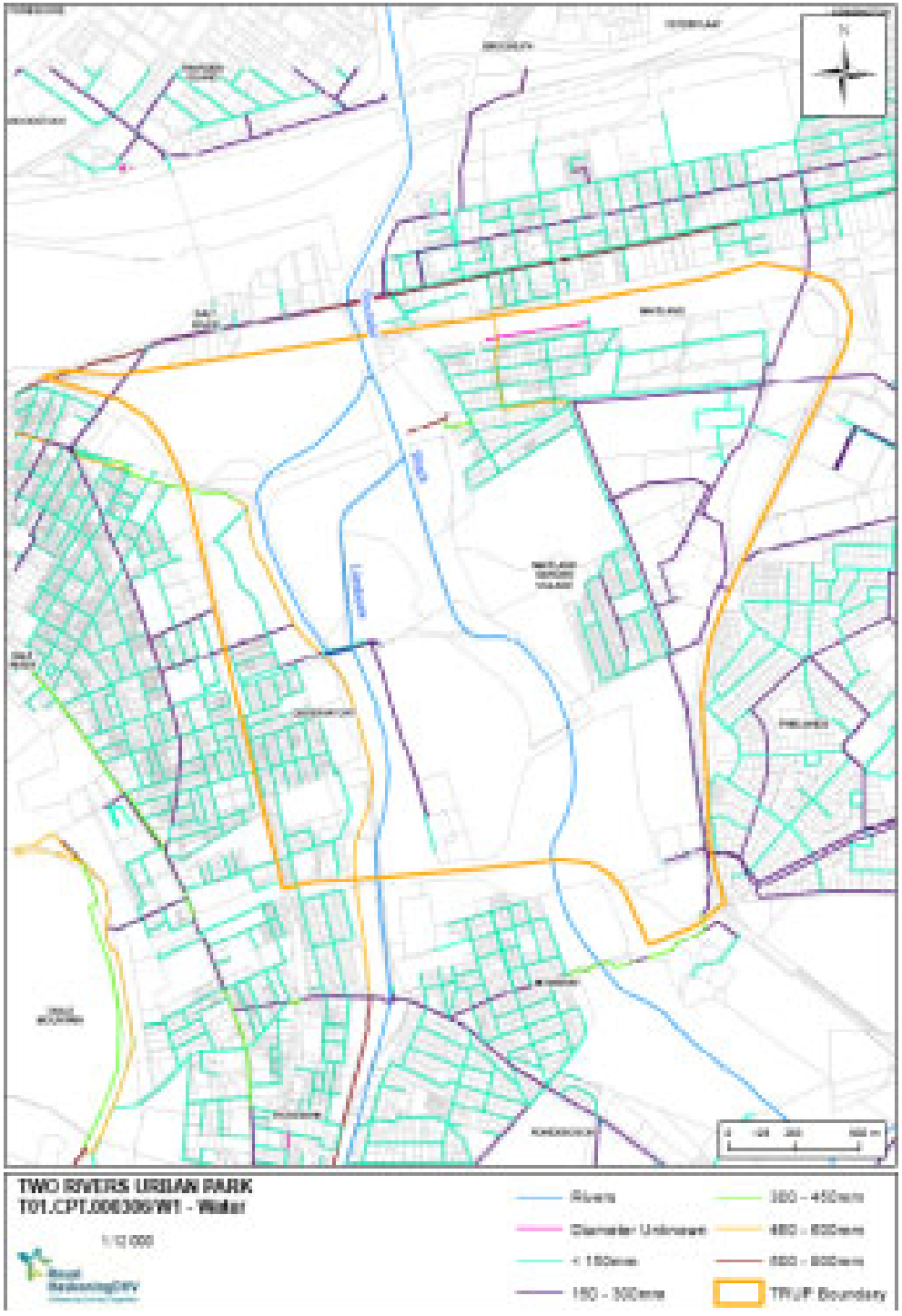
Indigenous remnants and critical biodiversity areas.

Services and Infrastructure



Stormwater Drainage

- Study area drains directly into rivers
- Limited treatment through existing wetlands
- Pollution management in the future is essential



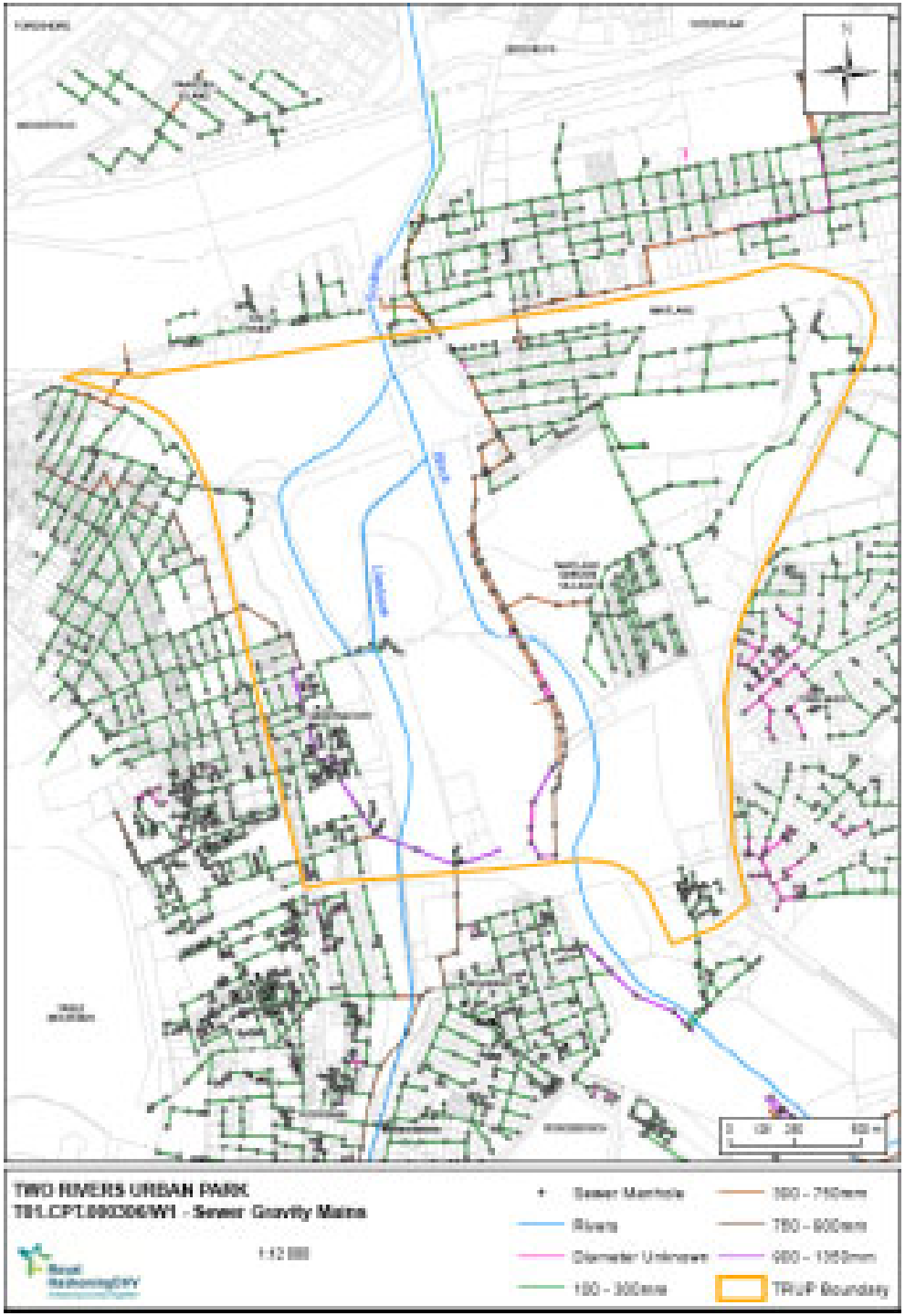
Water Supply

- Insufficient bulk supply and infrastructure
- Limited existing capacity
- Water saving measures to be applied
- Potential bulk supply options:

Upgrade of bulk supply?

Extraction from river and treatment?

Ground water and treatment?



Sewage

- Insufficient bulk drainage and treatment capacity
- Could consider temporary storage on site
- AWWTW's should be upgraded to treat effluent effectively

Existing Bulk Electrical Infrastructure

- Existing capacity limited
- Proposed 50MVA from 132/11 kV Step-down Substation – location still to be confirmed

Existing Distribution Furniture

Services and Infrastructure: The Future

Efficient measures to be implemented to limit bulk services requirements

Policies to guide interventions:

- 2014 Sustainable Energy Vision for Western Cape
- Cape Town Energy2040 (measures over the next 5 years towards achieving the goal of a low carbon, resilient and resource-efficient city)
- CoCT Smart Living Handbook: Making sustainable development a reality in SA homes

Services and Infrastructure

Energy Management Strategy

Energy conservation	Energy Efficiency	Energy substitution Renewables and/or Fuel Switching		Regeneration / own generation
Occupancy monitoring to control lighting and HVAC, behavioural change to energy use, maintenance (e.g. fixing leaks, filters)	Energy efficient lighting systems, BMS, process optimisation, SWH, insulation	Solar PV / Wind	Converting electric boilers to gas-fired	Biomass / Landfill / Biodigestor gas-to-electricity

Access and Transport

Access and Transport

Issues / Challenges:

- Road network has capacity constraints
- Roads, rail and rivers are barriers to movement for those on foot
- Stations – difficult to access, unsafe, inconvenient
- Existing NMT routes are not yet part of extensive broader network

Need for significant initiatives to change status quo

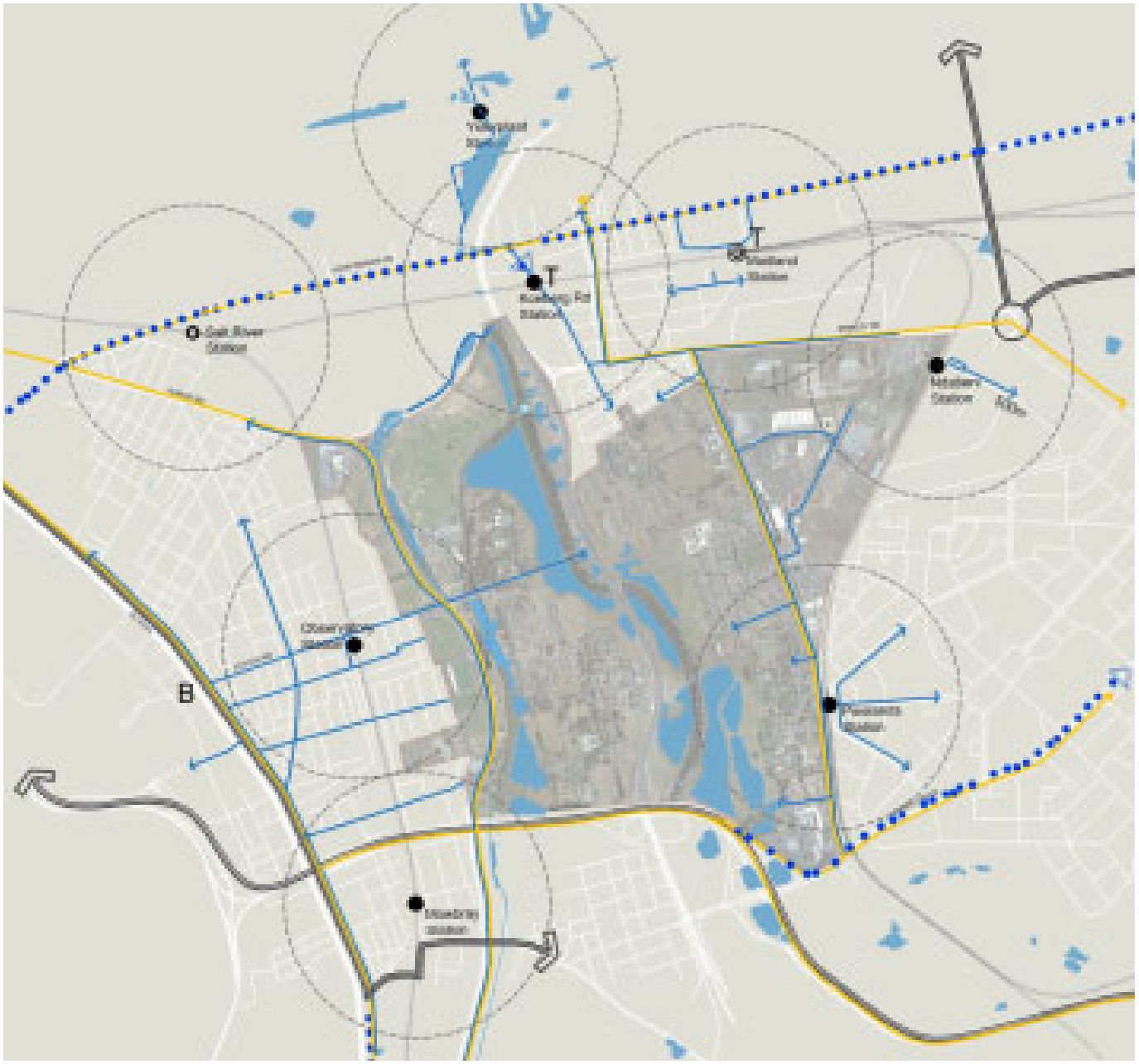
Policy focus on:

- Public transport and NMT
- Intensification of land use around particular points and in identified zones

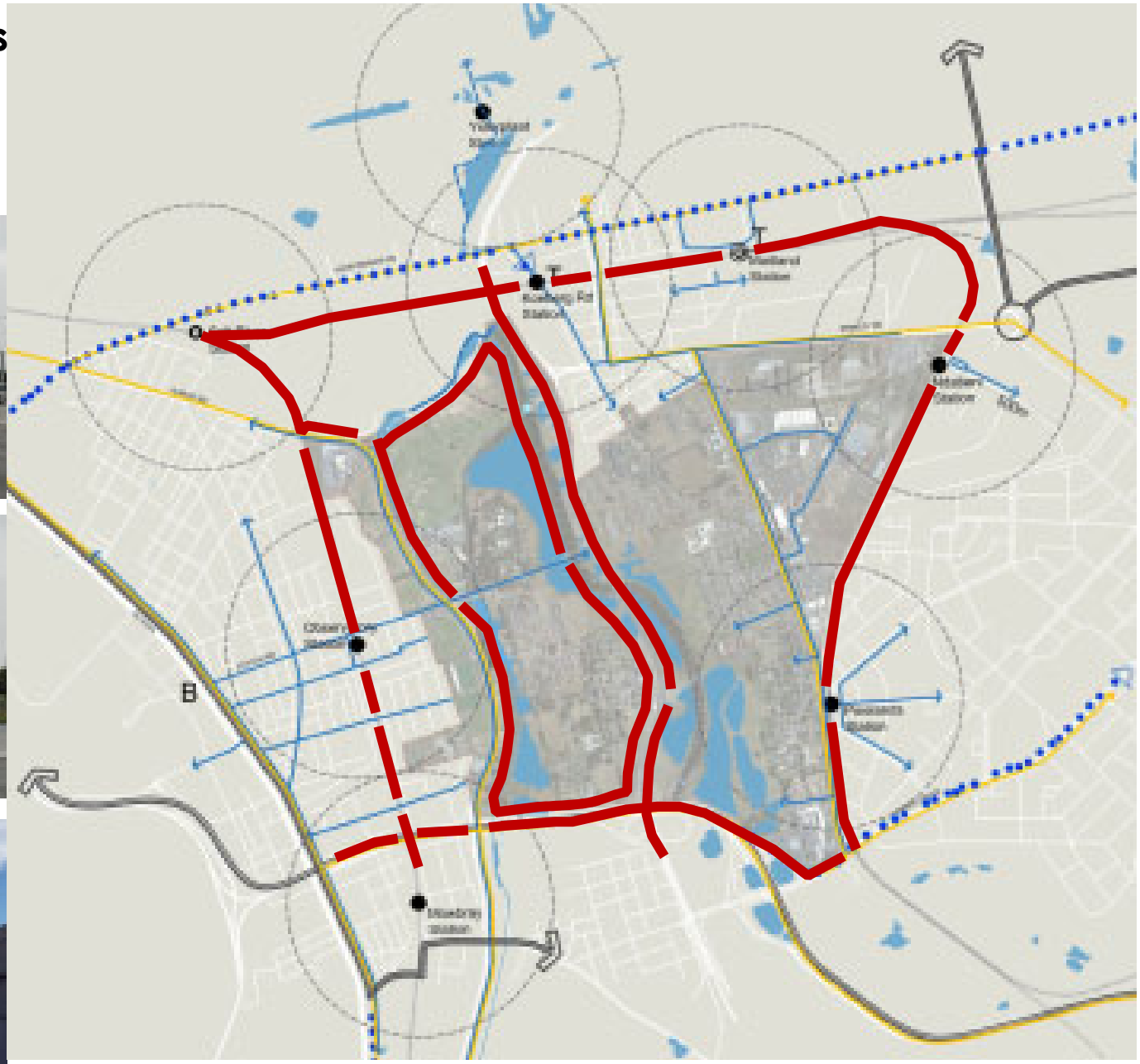
Greater acceptance of alternatives

Challenge in establishing new standards

Current services and infrastructure



Barriers for pedestrians

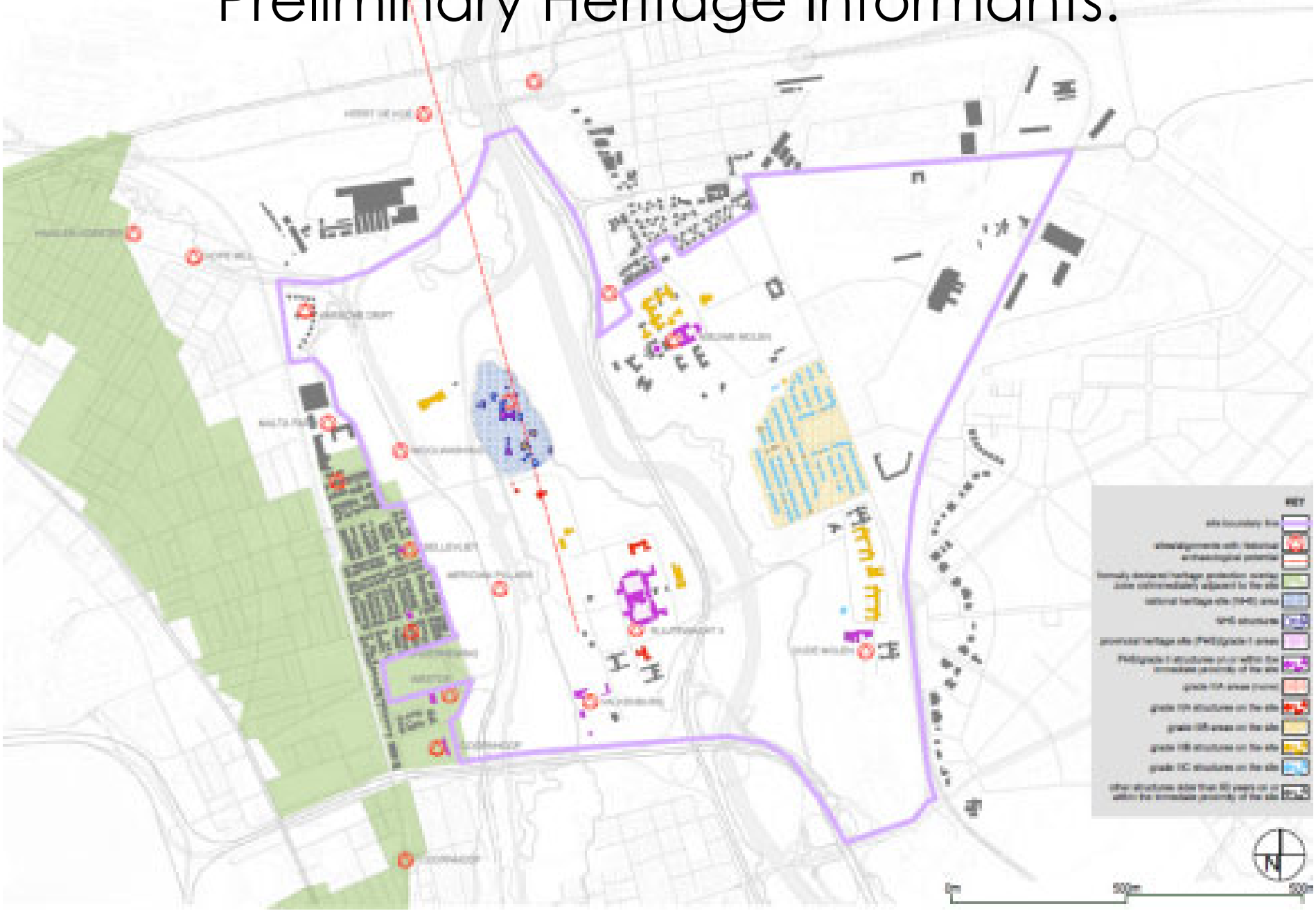


Access and Transport: The Future

- Non Motorised Transport facilities, requiring supportive urban design and land use activity
- Public transport (combination of rail and bus)
- Minimal penetration by private vehicles
- New east-west routes (Station Rd and Berkley Rd to address barrier to achieving *one* TRU-Park

Heritage

Preliminary Heritage Informants:



Heritage: Preliminary responses

- Conserve, protect, enhance and integrate tangible heritage and sites into planning process.
- Recognise and integrate the heritage value of the landscape *as a whole* and historical narrative associated with it.
- Integrate and further explore notions of **redress and acknowledgement** of apartheid and pre-apartheid historical wrongs.
- Explore mechanisms and opportunities for redress and further cultural acknowledgement.

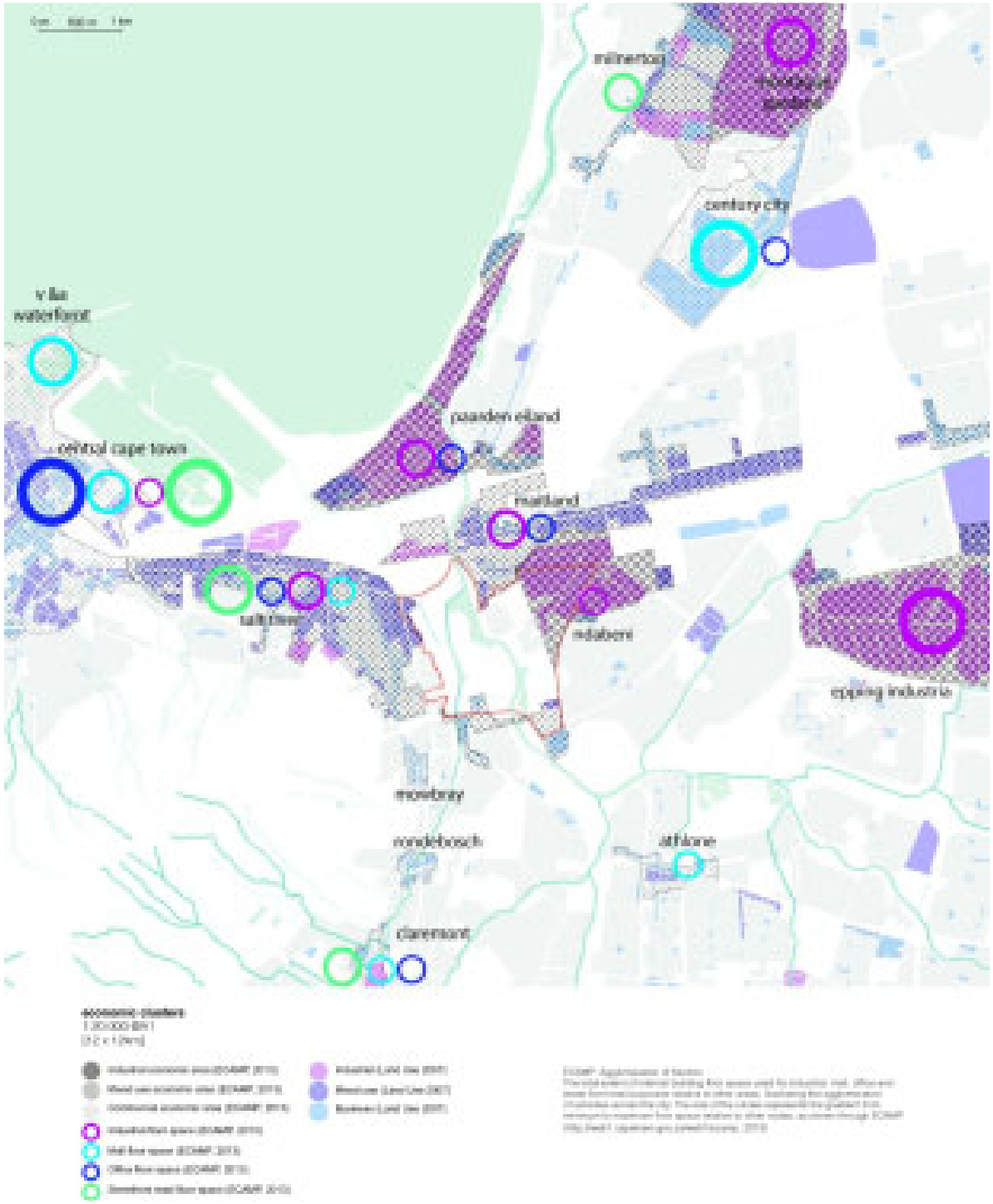
Economic Context

The site bridges between two systems of economic activity

1. Large format industrial
2. Smaller scale mix of business activities

Both are well established and demonstrate the desirability of the area from the perspective of a range of operators

Note: Local retail located within Voortrekker and Main Road Corridors and in Pinelands



Housing Context

Mix of detached, semi's, row housing, 2-4 storey flats, duplex's, mixed use arrangements

Housing: Observations

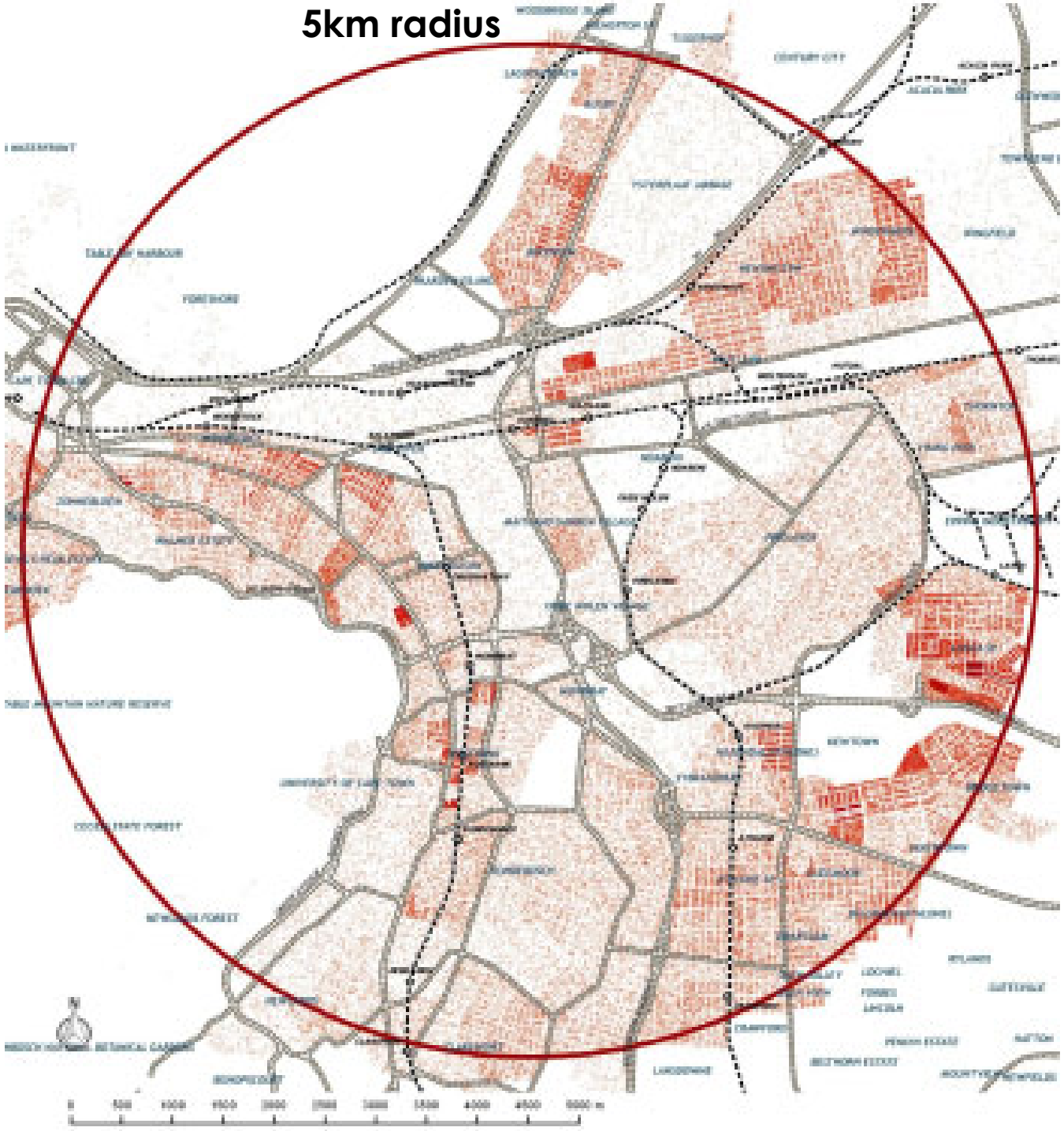
- Highest gross densities in Maitland and Observatory: 19-25du/ha
- With the exception of Pinelands and Sybrand Park, between 30% and 72% of HH's earn < R3200 / month
- High percentage of HH's are renting
- With the exception of Pinelands and Sybrand Park there is generally good integration of land uses

Low income households and transitory residents are choosing to locate in the area - choice of affordable accommodation close to jobs, PT, schools etc.

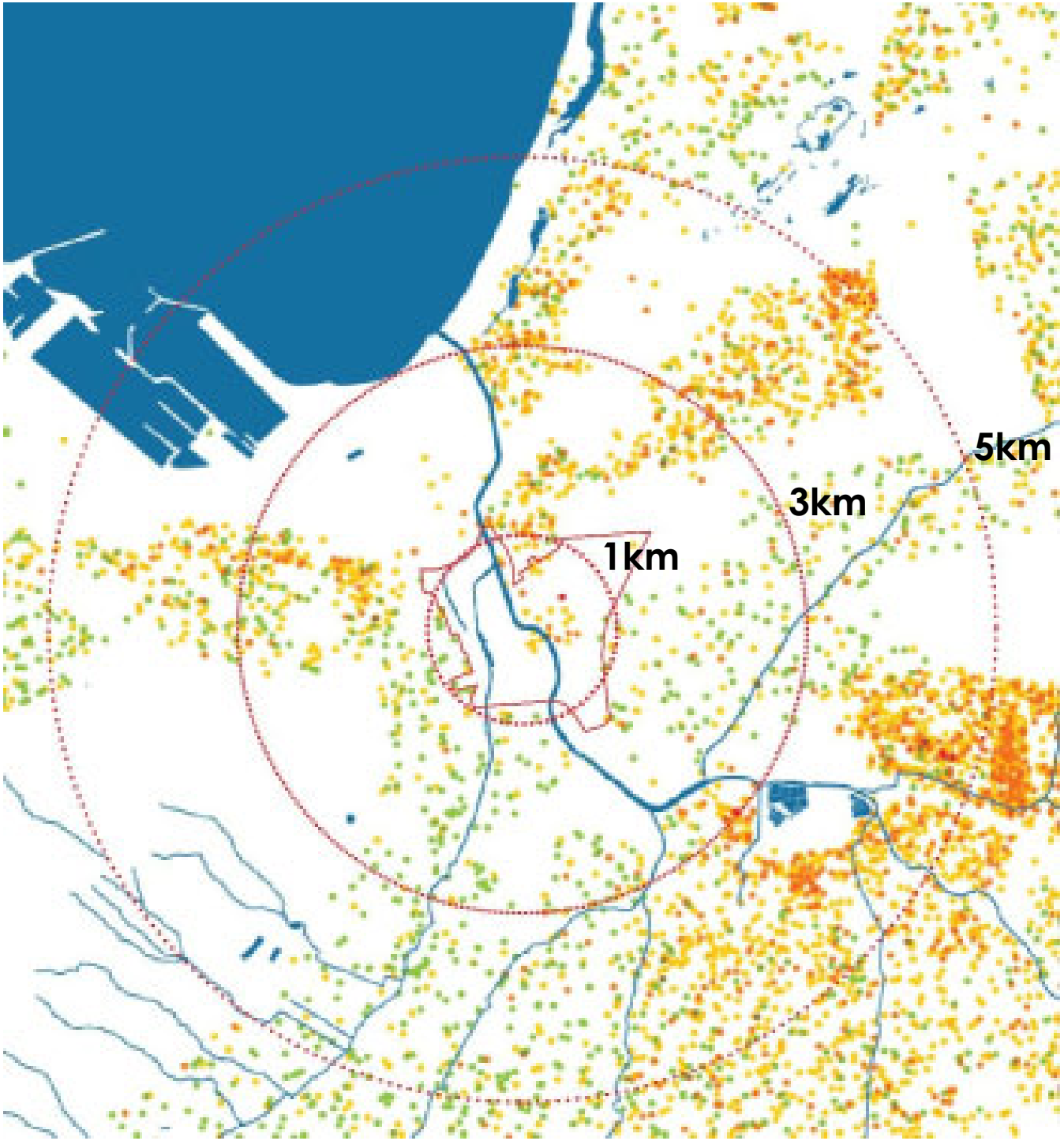
Social Infrastructure

The total population of **212 000 people** live within **5km radius** from the TRU-Park site area.
[one dot=one person]

0-7	**25039**
8-18	**29705**
19-35	**74230**
36-65	**67334**
66+	**15444**



The TRU-Park site is surrounded by very diverse socio-economic conditions.



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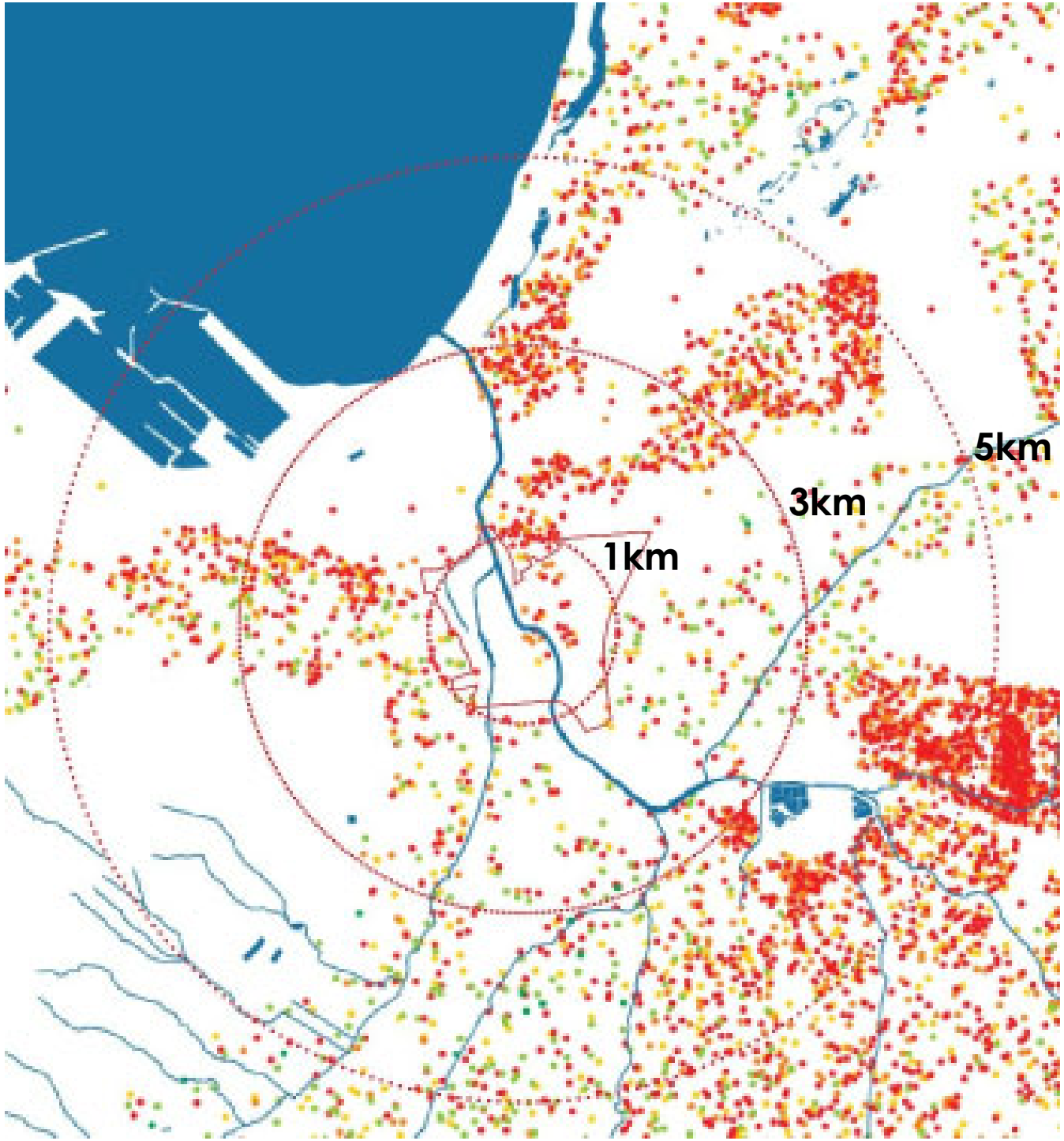
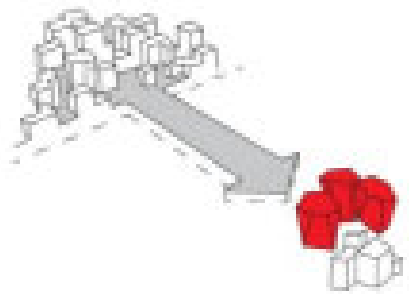
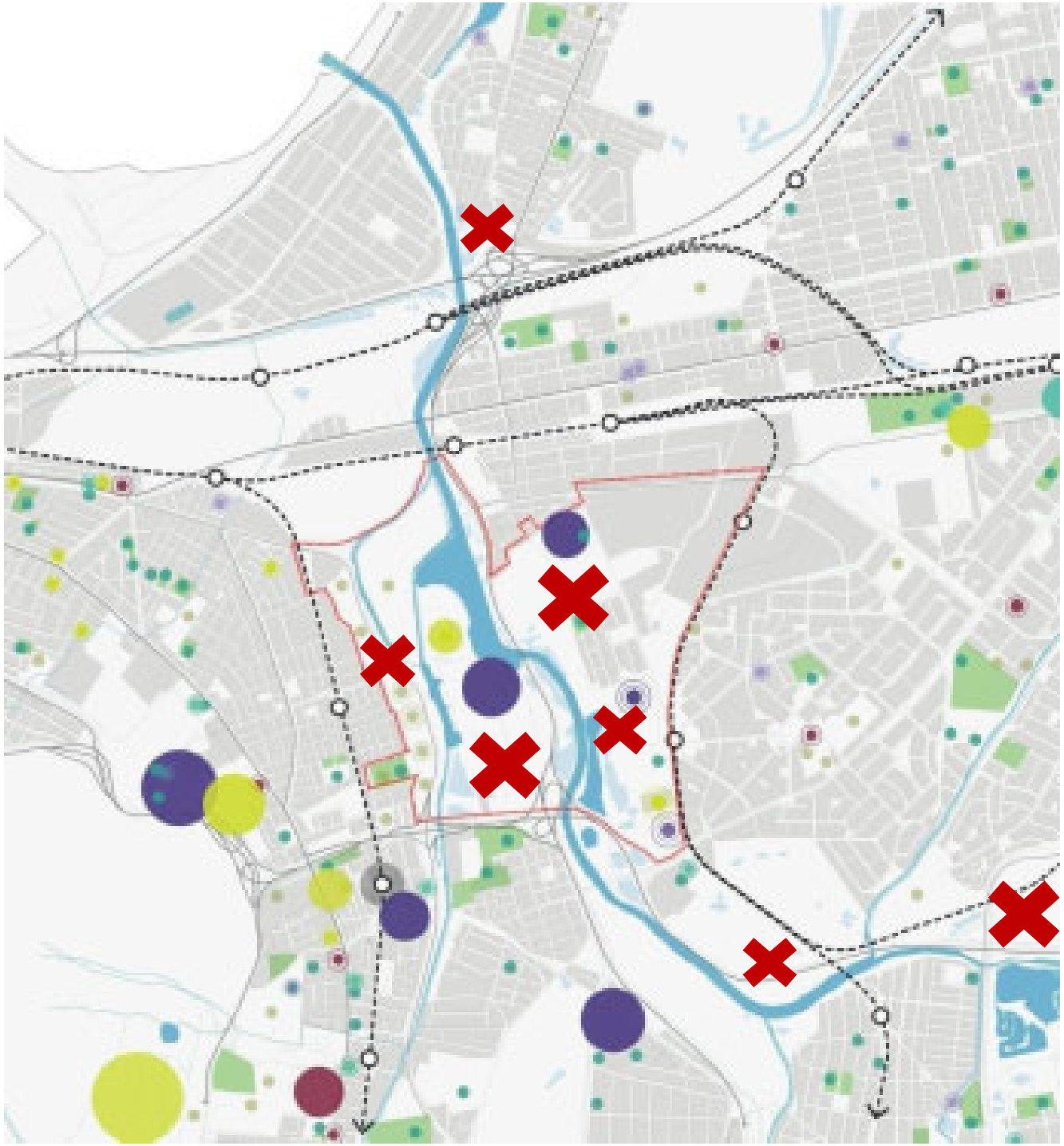


TRU-Park is sitting between two patterns of the distribution of social facilities.

TRU-Park site offers a great opportunity for the provision of additional social infrastructure. Locating key educational, sport and culture facilities within the site will activate the park, provide passive surveillance and encourage movement through the park.

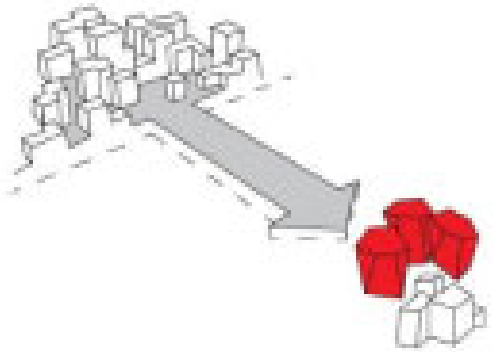


SOCIAL INCLUSION



DISCONNECT

BETWEEN CITY AND SLUM



SOCIAL INCLUSION

VIA LIBRARY PARK

Spatial Structure

The TRU-Park site is a fracture, sitting in between continuous urban and introvert islands.

TRU-Park site offers the opportunity to bridge this fracture. The future development around the different neighbourhoods could define the park edges and, in doing so, re-establish the continuity amongst the neighbourhoods.

Large infrastructure elements and open spaces are often acting as barriers.

Reduce the impact of large infrastructure as barrier between different neighbourhoods, landscape and water. Re-establish direct relation between people and landscape.

Enclaves with controlled access and lack of access to sites further inhibit movement

Reduce the impermeability caused by enclaves and increase safety by introducing some key routes and converting their perimeter edges into active interfaces.

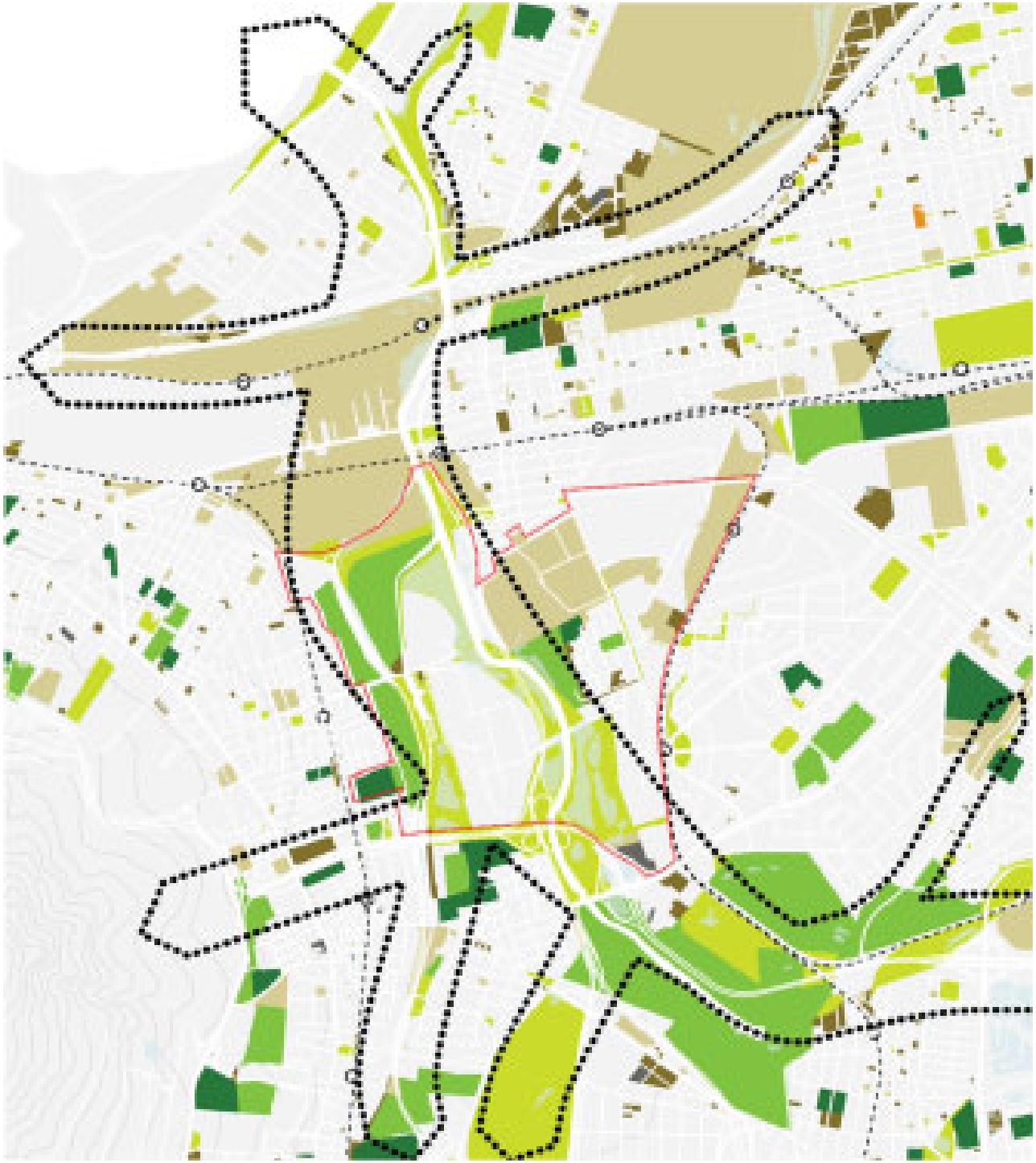
Invisible walls due to the discontinuity of the movement network.

Reduce the discontinuity of the movement network by inserting strategic links.

Strategically located land parcels outside of the site have the potential together, to unlock opportunity to use the river corridor as a 'seam' to restructure the sub district

Fragmented under-utilised and open spaces.

Taking advantage of the porosity of the site and surroundings, the open spaces could work as an ecological system reconnecting Table mountain with the Lagoon, overlapping with a system of public spaces linked by a nmt network.



Thank You