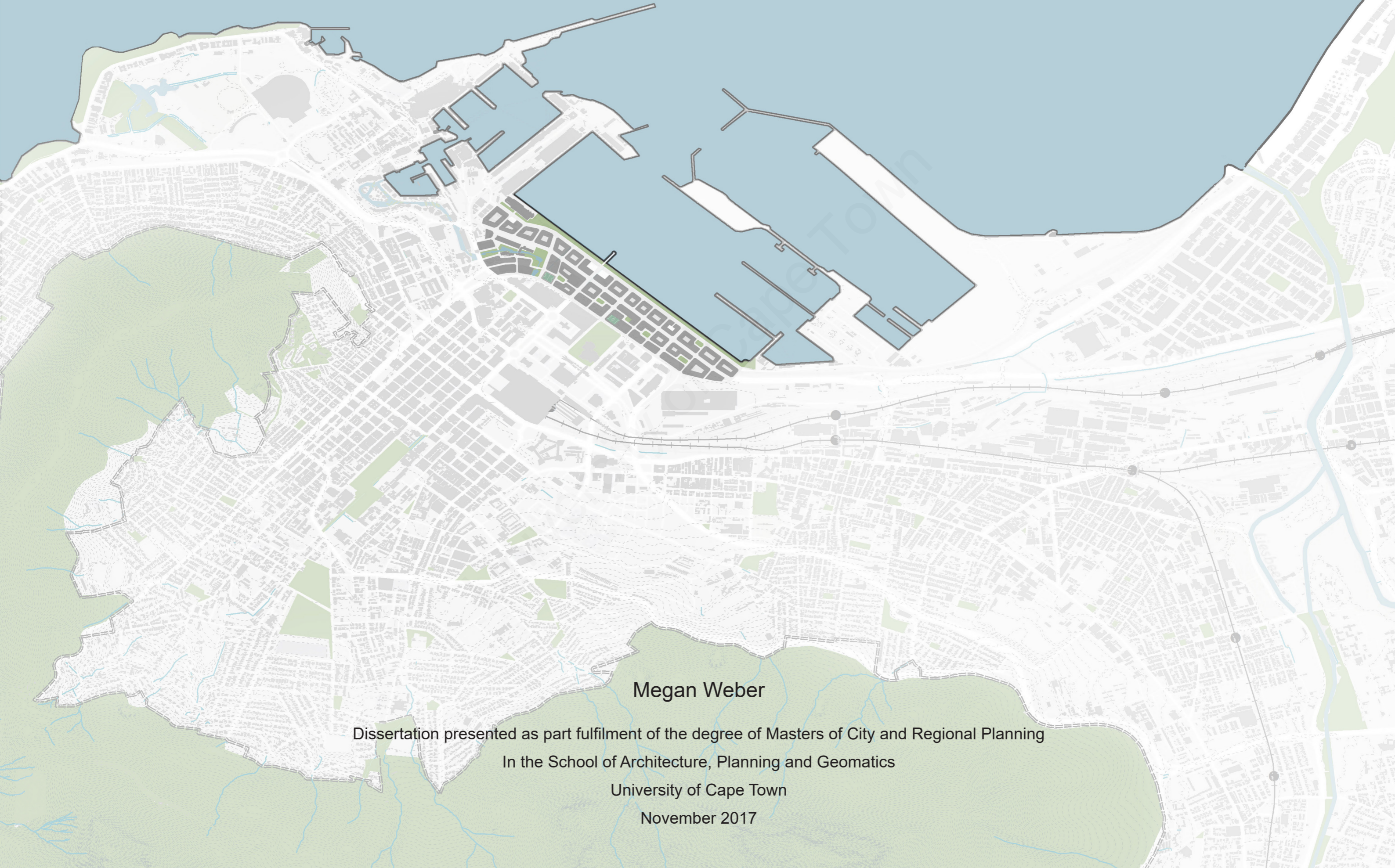


*The Right to the City (Centre): A Spatial Development Framework for
Affordable Inner-City Housing in Cape Town's Foreshore*



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Dissertation presented as part fulfilment of the degree of Masters of City and Regional Planning

In the School of Architecture, Planning and Geomatics

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ABSTRACT

There is a spatial dislocation between jobs and people in Cape Town, which is largely caused by financial exclusion through urban land markets. The majority of low-income households - who also constitute the majority of the city's population - live on the urban periphery, where property is affordable but opportunities are scarce. This places the burden of high transport costs on the shoulders of those least able to pay, and reinforces the patterns of segregation imposed by apartheid. This deep-rooted spatial inequality has recently been brought to the fore through a series of housing-related protests by Reclaim The City and others. These movements prove that the need for well-located, affordable housing is only getting more urgent. If Cape Town is to overcome the spatial legacy of apartheid, it needs more affordable housing in areas of economic and social opportunity.

This dissertation demonstrates how affordable housing can be provided in one well-located, inner-city site: The Foreshore. Situated in the City Bowl, the Foreshore is close to the abundance of employment opportunities and social facilities of this established and growing district. Further, the City of Cape Town has recently begun a tender process for development of the Foreshore. This included a request (albeit vague) for affordable housing to be included in the resulting project. Building on the City's intentions, this dissertation presents a spatial development framework for the Foreshore site that prioritises affordable housing and a mix of uses.

The need for affordable, inner-city housing was established through an analysis of Cape Town and the City Bowl. Through this analysis, the Foreshore emerged as a prime site for fulfilling this need. A review of housing policy and legislation, together with an assessment of Cape Town's housing market, determined that Social Housing is the best model for achieving sustainable affordability in an urban context. However, it was found that the involvement of private sector is crucial to realising developments that are feasible and diverse. Further, it is important to take a demand-driven approach to housing delivery, which is sensitive to market nuances and which draws on a range of spatial planning principles. This helps to create holistic, liveable neighbourhoods.

These principles were demonstrated in the spatial development framework for the Foreshore. This showed that developing the Foreshore presents an opportunity to reintegrate society, and to reconnect the city to the sea. It is possible to develop 8500 residential units in the site, most of which would be affordable to households earning R3500 to R15000 per month. To achieve this, it is vital that the elevated freeways be replaced with ground-level roads, which will in fact reduce traffic congestion. The city's historical connection to the sea should be restored by reconstructing the Adderley Pier and creating a Foreshore promenade.

Realising these projects in manner that is feasible, sustainable, and socially just would require an efficient and tactical implementation process. Discussions with experts in the field of affordable housing development revealed some key implementation strategies for this. These included the package of plans process, land value capture, and the strategic use and release of state-owned land. Together, these would enable the controlled involvement of private sector in the Foreshore development, and would help to find the project's infrastructure. These findings are not entirely exclusive to the Foreshore, and could therefore give guidance to affordable housing projects in other parts of the City Bowl. Therefore, developing the Foreshore to prioritise affordable housing could initiate the socio-spatial reintegration of Cape Town's fragmented city centre.

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LIST OF ACRONYMS

ALHDC – Affordable Land and Housing Data Centre	NASHO – National Association of Social Housing Organisations
ArcGIS – Arc Geographical Information Systems	NHFC – National Housing Finance Centre
BNG – Breaking New Ground	NHSS – National Housing Subsidy Scheme
CBD – Central Business District	NMT – Non-Motorised Transport
CCID – Central City Improvement District	PIE – Prevention of Illegal Eviction from and Unlawful Occupation of Land Act (1998)
CNU – Centre for New Urbanism	PP – <i>Participacion en Plusvalias</i>
CoCT – City of Cape Town (also referred to as ‘the City’)	PRASA – Passenger Rail Association of South Africa
CoNY – City of New York	RDP – Reconstruction and Development Programme
CRUs - Community Residential Units	RCG – Restructuring Capital Grant
CSIR - Council for Scientific and Industrial Research	RTC - Reclaim the City
CTICC - Cape Town International Convention Centre	SDF – Spatial Development Framework
DoH – Department of Housing	SDP – Site Development Plan
DoT – Department of Transport	SERI – Socio-Economic Rights Institute
DHS – Department of Human Settlements	SHI – Social Housing Institution
DLGH – Department of Local Government and Housing	SHP – Social Housing Programme
FET – Further Educational Training	SHRA – Social Housing Regulatory Authority
FLISP – Finance-Linked Individual Subsidy Programme	SUMP – Seattle Urban Mobility Plan
GDP – Gross Domestic Product	TCT – Transport Cape Town
GDPR – Gross Domestic Product per Region	TOD – Transit-Oriented Development
GIS – Geographical Information Systems	TPDP – Transnet Port Development Plan
JHC – Johannesburg Housing Company	UCT – University of Cape Town
KPMG – Klynveld Peat Marwick Goerdeler	V & A – Victoria and Alfred (waterfront)
MERO – Municipal Economic Review and Outlook	VOC – Dutch East India Company
	WSUD – Water Sensitive Urban Design

1. INTRODUCTION

1.1 Context and Relevance of the Study

Exclusionary urban land markets are preventing urban integration in post-apartheid Cape Town. The high cost of property and rentals in well-located areas such as the City Bowl means that low-income households can only afford to live on the urban periphery where land is cheap and opportunities are scarce (Turok, 2001; Turok & Watson, 2001; Lemanski, 2007). Current government housing programmes tend to conform to this pattern too, developing subsidised housing on greenfield land in the metro-southeast, far from the nodes of jobs and amenities in the City Bowl and the southern and northern economic axes (Newton & Schuermans, 2013; Musvoto & Mooya, 2016). This lack of affordable housing close to jobs and facilities means that low income households have to travel far to reach these opportunities. Transport costs can amount to nearly half of their already constrained income, and commutes to work or school can amount to over three hours per day (WCG, 2016). This distance from jobs and facilities not only inhibits the upward mobility of low income groups, but also puts strain on government resources that must be spread out all across the sprawled city (Aucamp & Moodley, 2002).

While the lack of affordable housing in well-located areas of Cape Town is not a new issue, it has recently gained momentum through the rise in housing-related protests in the last two years, as shown in Figure 1.1. The Reclaim The City (RTC) campaign, which emerged in 2016 as a protest against the sale of a state-owned site in Tafelberg, has been particularly active in advocating the need for *inner-city* affordable housing. RTC proposed that the Tafelberg site be used for social housing instead of being sold, and rallied around the slogan of “land for people, not for profit”. The original campaign garnered significant attention and support from civil society, and RTC has since expanded its campaign to propose social housing in two other sites in the City Bowl. The surge in these campaigns show that the demand for affordable housing in well-located areas such as the City Bowl is reaching tipping point.

In the midst of the RTC campaigns, City of Cape Town (CoCT) put out a tender in 2016 for the redevelopment of the Foreshore freeway precinct, a prime piece of land located adjacent to Cape Town’s CBD. This coincidence of events sparked my interest in the idea of using the Foreshore as a case study for how affordable inner-city housing could be provided in Cape Town, and potentially in other South African cities too.

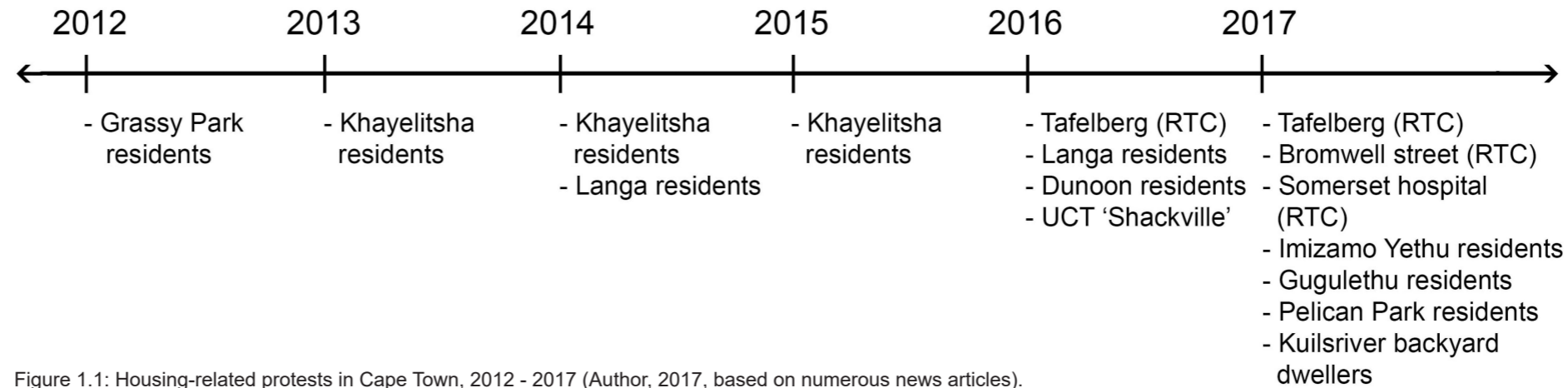


Figure 1.1: Housing-related protests in Cape Town, 2012 - 2017 (Author, 2017, based on numerous news articles).

1.2 Refining the Research Aims and Questions

Building on this preliminary idea, the primary aim of this dissertation is to demonstrate how the Foreshore site could be developed for affordable housing and a mix of uses. This is in answer to the key research question of:

How should the Foreshore precinct be developed to prioritise affordable housing and a mix of uses?

Subsidiary research questions to this are:

- Who is the market for this housing?
- What models of affordable housing would be best suited to this site and this market?
- What spatial planning criteria should be used to inform the Foreshore development framework?
- What implementation strategies would ensure that the Foreshore development unfolds in a way that is feasible, sustainable, and socially just?

These questions will be addressed using the case study research method, primarily through the technique of gathering and analysing secondary sources, although two interviews were also conducted. These research methods and techniques will be discussed in more detail in the following chapter.

1.3 Structure of the Dissertation

The next chapter outlines the research process of this dissertation, including its methods, techniques, ethical considerations, and limitations. Chapter 3 then provides a contextual analysis of the Foreshore site in relation to the need for affordable, well-located housing. It starts at a metropolitan scale, then moved to a submetropolitan level, and concludes with an assessment of the opportunities and constraints of the site itself. Chapter 4 then gives an overview of the policies and programmes relating to affordable housing in South Africa. It uses this, together with an analysis of Cape Town’s housing market, to determine which affordable housing models would be best suited to the Foreshore development.

From here, Chapter 5 presents a set of urban planning criteria that will guide the development of the site to create lively urban neighbourhoods. These spatial principles are then applied to the site to produce a development framework for the Foreshore precinct that prioritises affordable housing and a mix of uses. Chapter 7 then provides strategies and a framework for the implementation of this development proposal. Finally, Chapter 8 concludes the dissertation with some of the key lessons learnt and some of the potential impacts of the study.

2. RESEARCH METHODS

This chapter will outline the research methods and techniques used to produce this dissertation, including my normative theoretical framework.

2.1 Research Methods and Techniques

This dissertation explores a broad issue (affordable inner-city housing) in the context of a specific site (the Foreshore). In this way, the research draws on the case-study method, which analyses far-reaching issues/processes within the context of a particular site (Duminy et al., 2014). The aim of this is to produce findings that are generalisable to the concept under study (Ibid.). Likewise, this dissertation hopes to produce intervention proposals that facilitate affordable housing in the Foreshore, which could assist planning similar projects in other inner-city areas in Cape Town. However, unlike case-study research, this dissertation is concerned with *exploratory* rather than *explanatory* research. In other words, the primary aim of this research is to *explore* how affordable housing could be developed in the Foreshore, rather than to *explain* why/how the area has come to be developed without the inclusion of affordable housing (although this issue will also be addressed during the course of the dissertation).

The method that has been most influential for this dissertation is the process of plan formulation, as presented in Behrens & Watson (1996). This is an iterative process of analysing the site, conceptualising possible uses for it, formulating programmes, and planning interventions, all the while circling back to earlier steps in the process and making adjustments to the plan accordingly. This is discussed and demonstrated in more detail in the following section on the research process.

This dissertation primarily used desktop research to gather data (both qualitative and quantitative), but site visits and two semi-structured interviews were also conducted. GIS mapping and design were also key techniques.

The desktop research covered a wide range of topics: environmental and socio-economic conditions for the contextual analysis; housing policy and legislation for the policy review; property markets for the housing market assessment; urban planning theory for the spatial principles; and international precedents for the projects and strategies entailed in the plan and implementation chapters. The sources used were predominantly online academic articles from peer-reviewed journals, government reports and policies, and books from the UCT Built Environment library.

The two interviews were conducted using Bernard's (1994) semi-structured method, where the interview structure is left loose to enable a more conversational atmosphere that puts interviewees at ease. The purpose of these interviews was to gain insight into the development process entailed in the implementation of affordable housing, as there is limited writing on this subject - especially in the Cape Town context. The interviewees that were chosen were therefore experts in the field of affordable housing and development: social housing expert Malcolm McCarthy (general manager of NASHO), and land economist Robert McGaffin (lecturer in Construction Economics and Management at UCT). It was made clear to the interviewees that they could stop the interview and/or retract their consent at any time and this would be respected, but both of them gave full consent for the use of their words and names in the dissertation. The signed consent forms are attached in the appendix.

For the mapmaking and plan formulation, I used ArcMap GIS software to produce my base maps, and then adapted these using Photoshop. The GIS data used was mainly obtained from the UCT Built Environment library collection, as well as from the City of Cape Town open data portal.

2.2 Research Process

Figure 2.1 shows the cyclical process of plan formulation, informed by the method set out in Behrens & Watson (1996). The first step was to establish a set of guiding values that summed up my ethical standpoint going into the project. These values, which are outlined in the following subsection, then informed the next step, which was a three-part analysis:

1. A general contextual analysis of the chosen area, starting at a metropolitan scale, then moving to a submetropolitan scale, and finally a site level;
2. A review of the policy and legislative context of affordable housing in South Africa;
3. A specific analysis of the current housing market in Cape Town.

These analyses and values then informed the creation of a set of normative planning criteria, which in turn informed and were adjusted by the formulation of the spatial development framework for the site. Implementation strategies were then generated for this development framework, and in some cases these caused adjustments to the original framework.

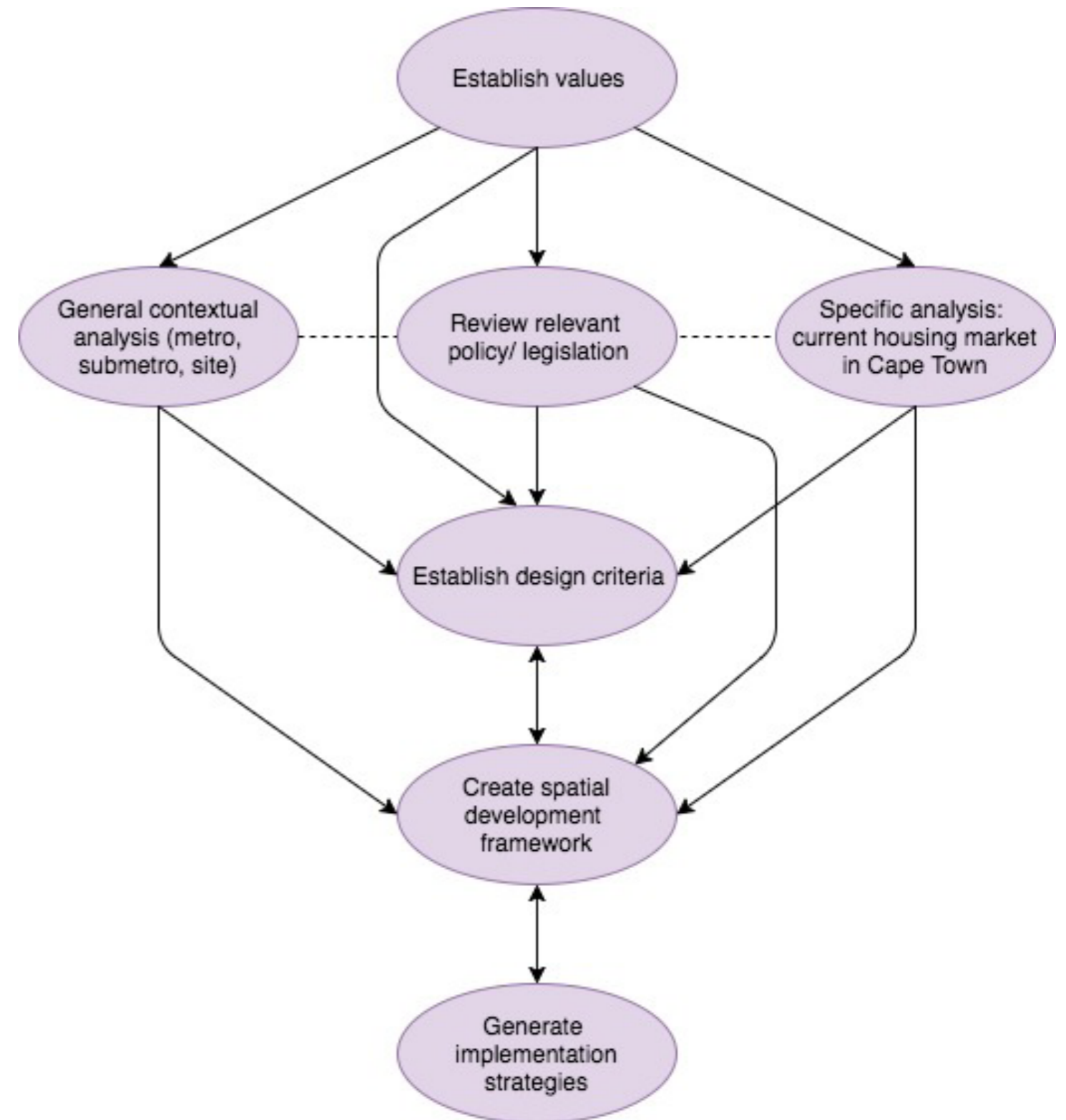


Figure 2.1: Method diagram (Author, 2017)

2.2.1 Establishing my Value System

Research and design are both subjective processes. People perceive their surroundings through the lens of the unique set of values and assumptions that they have been socialised into (Hill Collins, 1986; Okely, 2012; Nazurak, 2011). These values and assumptions shape research and design in terms of what is prioritised, what is seen as positive or negative, and what is proposed as a solution. Researchers and designers should not try to erase their subjectivity, as “it is impossible to totally eliminate the presence of authorship in fieldwork or research methodology”, but they should rather be reflexive of it (Nazurak, 2011). In this section I aim to be reflexive by stating upfront the normative standpoint I have brought into this project, which has shaped my research questions, analysis, and proposed solutions. This standpoint is informed by spatial theory literature that I have read and resonated with, which I have then translated into a set of values that will be outlined in more detail in Chapter 5.

The Right to the City

This concept, coined by Lefebvre (1968) and adapted by Purcell (2002) and Harvey (2008) among others, has been central to the formulation of this dissertation. The ‘right to the city’ refers to “the right of inhabitants to physically access, occupy, and use urban space”, as well as the right to participate in the development and management of urban space (Purcell, 2002: 103). This right is not “a simple visiting right”, but rather the “right to urban life, in transformed and renewed form” (Lefebvre, 1968: 435). Here, the city is seen as fulfilling a diversity of human needs of space, including:

“the need for security and the need for openness, the need for certainty and the need for adventure, that of the organisation of labour and that of play, needs for predictability and unpredictability, for unity and difference, for isolation and encounter, for exchanges and investments, for independence (even solitude) and communication, for immediacy and for long-term perspective” (Lefebvre, 1968: 428).

This dissertation’s aim of demonstrating how affordable housing could be provided in the centrally located Foreshore is therefore an attempt to promote this ‘right to urban life’ - and to all that the city offers - for low-income households.

The Just City

Fainstein’s (2005) concept states that city planning should strive for a city that is just to all its inhabitants. It

acknowledges that “the particular meaning of justice or fairness may assume a different form depending on situation”, but asserts that “the ideal of justice or fairness transcends particularity” (Fainstein 2005: 126). This relates to this dissertation’s underlying objective of enabling more socially and economically just settlement patterns in Cape Town.

The Compact City

This dissertation uses the compact city model as part of the justification for developing a brownfield site in the city centre. A compact city combines different land uses and high residential densities within a relatively small urban footprint (Neuman, 2005). This is in contrast to the sprawled city - a product of modernist spatial planning and the age of the automobile - where land uses are separated into relatively distinct commercial, industrial, and low density suburban residential areas (Dieleman & Wegener, 2004). The sprawled city requires much longer transit journeys, as the population is spread out over a large area and there are great distances between places of work and places of residence (Ibid.). It also interferes with the ecological functioning of the landscape, as the increased built footprint reduces the earth’s capacity to reabsorb water or support biodiversity networks (Gasson, 2007). The compact city, on the other hand, reduces the need for motorised transport, as work and home environments are either within walking distance of each other, or else only require a short trip that can be made using public transport. Further, the condensed urban footprint of the compact city enables more of the surrounding land to be reserved for the ecological and agricultural functions that are vital to the wellbeing of human and non-human life (Gasson, 2007).

This dissertation’s aim of providing affordable housing in the city centre aligns with the compact city goal of creating mixed-use spaces where work and home environments are in close proximity of each other. This also reduces people’s need for motorised transport, thus curbing carbon emissions and alleviating traffic congestion. Densifying the city centre rather than creating sprawled, low density, suburban housing would also prevent the irreversible conversion of productive or ecologically sensitive land into built footprint. The compact city model is therefore a key concept for the premise of this dissertation.

Placemaking

This spatial concept emphasises the importance of creating spaces that invoke a sense of belonging, safety, and joy in their users. Norberg-Schulz (1991 [1976]) and Lynch (1960) suggest that this ‘sense

of place’ can be achieved through creating spaces with a distinctive spatial identity that draws people in and orients them within the space. Behrens & Watson (2014 [1996]) provide suggestions for layout design elements that help to create a sense of place and belonging. Placemaking is important to this dissertation’s aim of making the Foreshore a space where inhabitants *feel* at home, in addition to being financially able to live there.

Ecological resilience

Human experience is an important factor in design, but non-human lifeforms and natural systems should also be a central concern in the design of urban areas. The concept of ecological resilience in city planning speaks to the importance of designing for the benefit of all lifeforms, in present and future generations (Collard et al., 2015). This means implementing spatial and policy interventions that actively reduce the city’s contribution to climate change, and which help to prevent, mitigate, or adapt to the changing weather conditions expected in the coming years (Goodland & Daly, 1996). This concept should be applied to all development proposals, but is especially pertinent for developments in coastal areas such as the Foreshore, where the effects of changing weather conditions will be most extreme.

Drawing on this normative theory framework, I developed the following set of values to guide my analysis, concept formulation, and plan development:

- **Integration and equity:** Promoting equitable integration between different people, and between people and natural systems.
- **Vitality and sense of place:** Promoting liveable and lively spaces with a strong spatial identity.
- **Choice and opportunity:** Promoting a range of land uses, housing types, transport modes, and activities.
- **Ecological resilience:** Preventing, reducing, or adapting to the effects of climate change to promote present and future generations of all lifeforms.
- **Permeability and accessibility:** Promoting ease of access into and within the site for all transport modes but especially non-motorised transport (NMT).

These values will be discussed in more detail - especially concerning their spatial implications - in Chapter 5.

2.2.2 Analysing the Site and Subject

My values and theoretical framework also informed my analysis of the Foreshore site and the subject of affordable inner-city housing. First, a contextual analysis was conducted, starting at a metropolitan scale, and gradually honing in to a precinct site scale. The metropolitan analysis used local and provincial government reports, academic journals, books, and news articles to identify key socio-economic and mobility issues facing the city and assess how the development of affordable inner-city housing could potentially alleviate these issues. The sources were obtained using UCT’s online and physical libraries. The analysis then moved to a sub-metropolitan scale, focusing on the City Bowl as an area with the potential to provide large quantities of affordable housing close to the jobs and facilities of the city centre. This section looked at the environmental setting, patterns of urban development, and socio-economic trends in the area, once again using sources from the UCT libraries and online search platforms to conduct the research. Mapping was also a key component of this section, and this was done using ArcMap GIS and data obtained from the UCT technical library and the City of Cape Town open data portal.

The analytical focus was then refined to a site level, looking at the opportunities and constraints of the Foreshore precinct as a site for affordable housing development, using my set of values to determine these. In addition to the desktop research and mapping, I made a site visit to the Foreshore on 15 September 2017 to gain a better spatial understanding of the site. This consisted of walking through the site and its surrounds, starting at the Civic centre and covering the ground level portions of the Nelson Mandela and FW de Klerk Boulevards. I took photographs of spatial elements I felt were important (some of which are included in the dissertation), and made note of how the space made me feel and why. This process enabled me to experience the space in its current state and understand what could and should be changed in order to enable the creation of liveable urban neighbourhoods.

Following the contextual analysis, a review of South Africa’s housing policies and legislation was conducted in order to understand the legislative context for affordable inner-city housing and the different models available. This entailed reading relevant policies and Acts pertaining to housing and human settlement, as well as literature from the broader, critical discourse of affordable housing. Once again, the sources for this research were obtained from the UCT virtual and physical libraries. After the policy review was complete, an assessment of Cape Town’s housing market was

conducted. This was done to understand which of the models discussed in the policy review were most needed, and which would be most appropriate for the Foreshore site and its particular market. This involved detailed research into Cape Town's property economics, and calculating the income bracket of the intended market for affordable housing in the Foreshore site. These calculations were based on the average salaries of jobs available in the City Bowl, with the understanding that the market for affordable housing developed in the Foreshore would be people working in low-paid jobs in the area. The salary averages were obtained from www.Payscale.com, which gives the mean, median, and mode of salaries in particular jobs fields in South Africa, based on surveys of workers in these fields.

The contextual analysis, policy review, and housing market analysis together provided a solid understanding of the opportunities and constraints of the Foreshore site at multiples scales, and of the subject of affordable inner-city housing in relation to the site.

2.2.3 Creating a Different Vision for the Foreshore

Once this understanding of the current context of the site and subject had been established, the process of imagining a different future for the Foreshore site could begin. The first step of this process was to establish a set of spatial planning criteria based on my values. These criteria were also informed by extensive research into spatial planning theory on how to create urban neighbourhoods that holistically cater to people's physical, psychological, and emotional needs of the built and natural environment. These spatial concepts were illustrated with hand drawn and Photoshop-edited conceptual diagrams.

These broad spatial planning guidelines were then applied to the Foreshore site to create a spatial development framework for affordable housing, informed by the findings of the previous analysis chapters. The visuals for this chapter were created using Adobe Photoshop and GIS base maps. Further desktop research was conducted to inform the framework, particularly for calculating which and how many new public facilities would be needed to accommodate the future population of the Foreshore. This was done using CSIR's www.socialfacilityprovisiontoolkit.co.za.

2.2.4 Understanding the Implementation Process

The proposals made in the spatial development framework were then translated into clear projects and strategies and fitted into a phased implementation framework. This required further investigation into the development process – particularly the process of developing affordable housing in the context of a profit-driven land market. Two experts in this subject were consulted for insight: Malcolm McCarthy (general manager of the National Association of Social Housing Organisations [NASHO]) and Robert McGaffin (lecturer in Construction Economics and Management at the University of Cape Town). As described in section 2.1, these interviews were semi-structured in that they covered specific questions but were allowed to drift off topic in a conversational manner. The findings from these interviews are woven into Chapter 7 (Implementation), and insights into the newly updated social housing budget necessitated some minor alterations to the review of this programme in Chapter 4.

The key projects and strategies were also largely informed by precedent studies of similar projects/strategies that were successfully carried out elsewhere in the world. Here, 'success' is a subjective term derived from my set of values and spatial principles. Analysing successful precedents revealed lessons for how to implement similar projects or strategies in the Foreshore site, although the implications of contextual differences were acknowledged.

2.2.5 Reflecting on the Research Process and its

Limitations

There were several limitations to the research methods, techniques, and scope of this dissertation. Firstly, there was the constraint of time, as the MCRP programme only allocated four months to the dissertation process. This short time period, together with the spatial nature of my chosen dissertation topic, led me to choose a research approach that relied predominantly on desktop research rather than extensive interviews. This was time-efficient, as there was little time spent setting up and transcribing interviews. However, in hindsight it would have been beneficial to get more external input from experts in the field of affordable housing. This would probably have strengthened the feasibility and nuance of the proposals made in the dissertation.

The mapmaking process was dependant on the availability and quality of GIS data, which was not always optimal. Much of the available data was incomplete or dated, and much of the data I needed was not available. In instances where GIS data was unavailable, I tried to plot data by hand from textual sources or from existing maps. This may have undermined the accuracy and reliability of the maps produced.

Another aspect of the research that could have been strengthened is the site visit to the Foreshore. This could have covered more of the site, such as the industrial port area and water's edge. However, I did not feel safe entering these sparsely populated areas alone, and in addition to this there were extreme wind conditions on the day of the site visit that made it difficult to move through the space as a pedestrian. The short timeframe of the project discouraged me from making a second visit to the site, and so my experiential understanding of the site is limited.

2.3 Conclusion

This section has presented a retrospective assessment of the research process undertaken for this dissertation, outlining the underlying values, methods, and limitations of the research. The product of this research will now be presented in the following chapters, starting with a contextual analysis of socio-spatial trends that relate to affordable inner-city housing (or the lack thereof) in Cape Town, the City Bowl, and the Foreshore.

3. CONTEXTUAL ANALYSIS

This chapter analyses the context of the chosen site (the Foreshore) and the subject of the dissertation (affordable inner-city housing). It starts with a broad analysis of the Cape Town metropole in section 1 to establish the need for affordable housing in well-located areas such as the City Bowl. The second section then focuses in on the City Bowl as a well-located submetropolitan area where large quantities of affordable housing could be developed in various sites such as the Foreshore. Finally, the third section commits to the Foreshore as the chosen site for the development of affordable housing, and provides an analysis of the opportunities and constraints of the site in terms of its developability.

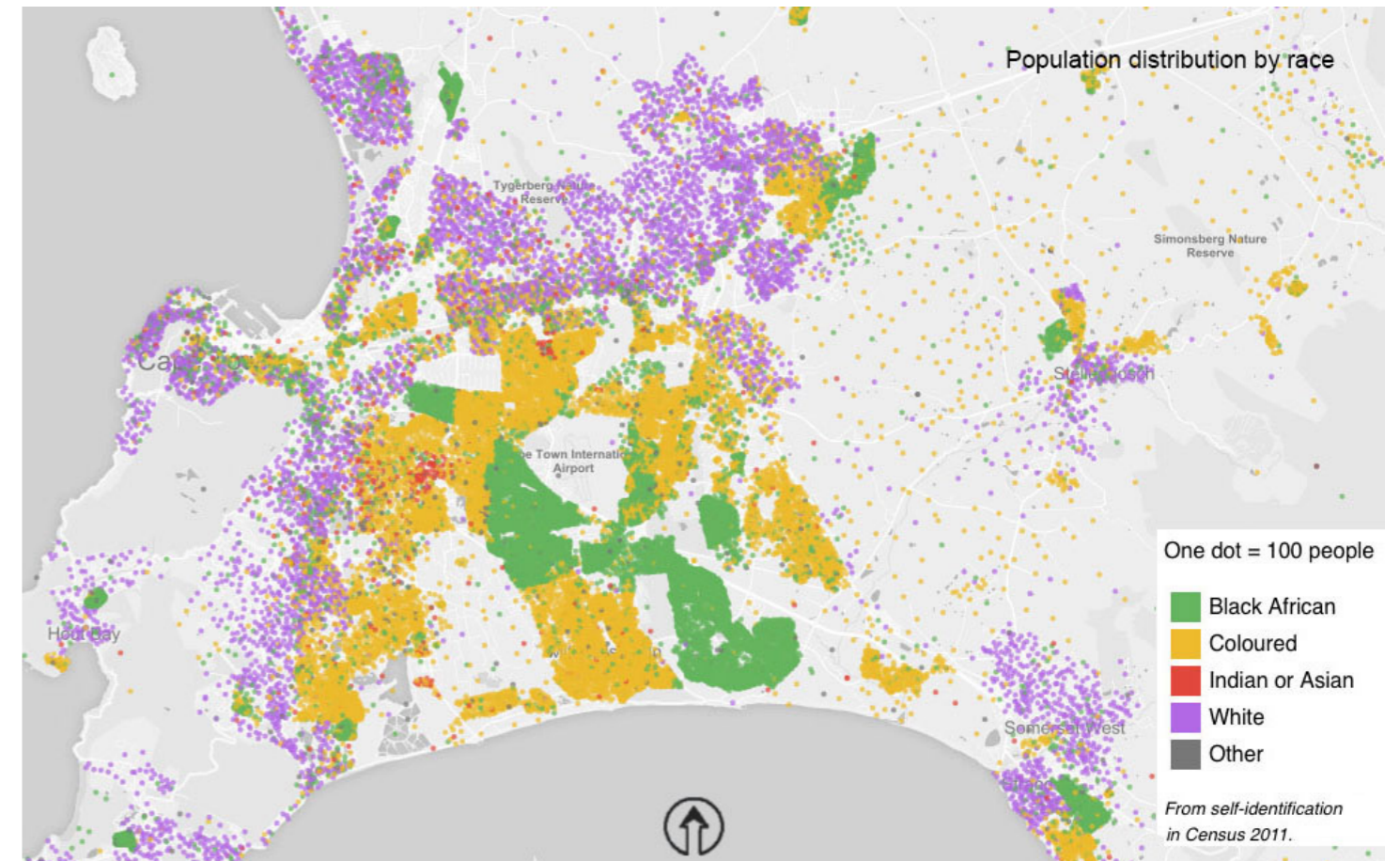
3.1 Metropolitan Analysis: Cape Town

This section will analyse the Cape Town metropolitan spatial patterns and trends in terms of its social, economic, and mobility trends. It will use this analysis to argue the need for affordable housing located closer to areas of employment opportunities, particularly in and around the central business district in the City Bowl.

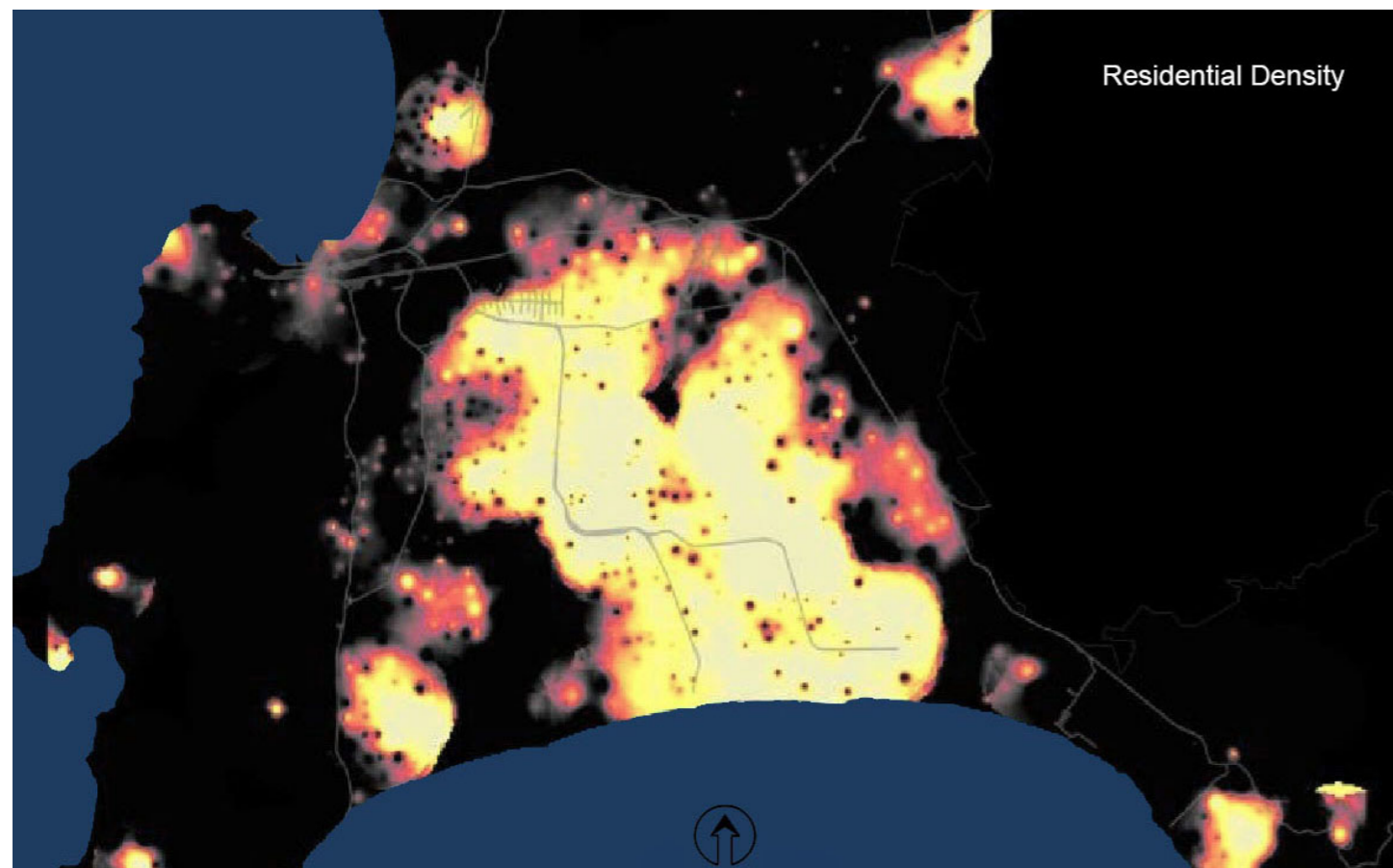
3.1.1 Demography, Income, and Housing

In 2016, Cape Town's population was estimated at 4 004 793 people, which marked a 7% increase from 2011 (CoCT, 2016). As Map 3.1 shows, this population is largely concentrated in the metro south-east, particularly in the Cape Flats. This is largely due to the Group Areas Acts of the 1960s, when suburbs such as Mitchell's Plain and Khayelitsha were constructed to house people of colour (the majority of Cape Town's population) who were forcibly removed from newly designated 'white areas' (Nel & Rogerson, 2009). As seen in Map 3.2, this pattern of racial segregation persists despite the fact that it is no longer legislated.

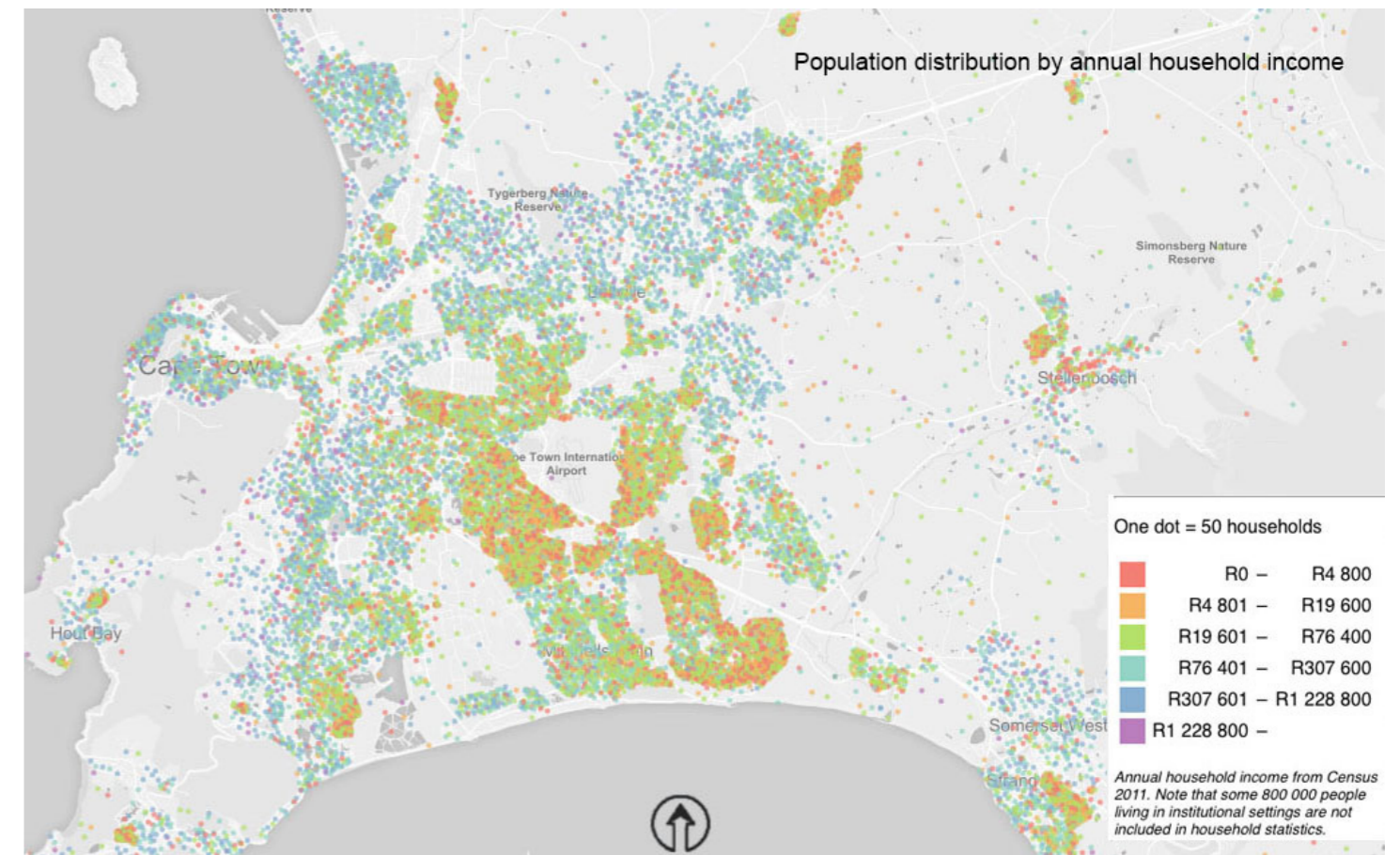
Another layer of segregation that has emerged is that of income levels, whereby low income groups are mainly concentrated in the metro south-east, while higher income groups cluster around the CBD, southern and northern suburbs, as shown in Map 3.3. This income segregation largely corresponds with the racial segregation in that people of colour, who were oppressed under apartheid, tend to earn less than their white counterparts, who benefited economically from these oppressive systems (DLGH, 2006). Hence the spatial pattern of Cape Town is characterised by concentrations of lower income households located on the urban periphery.



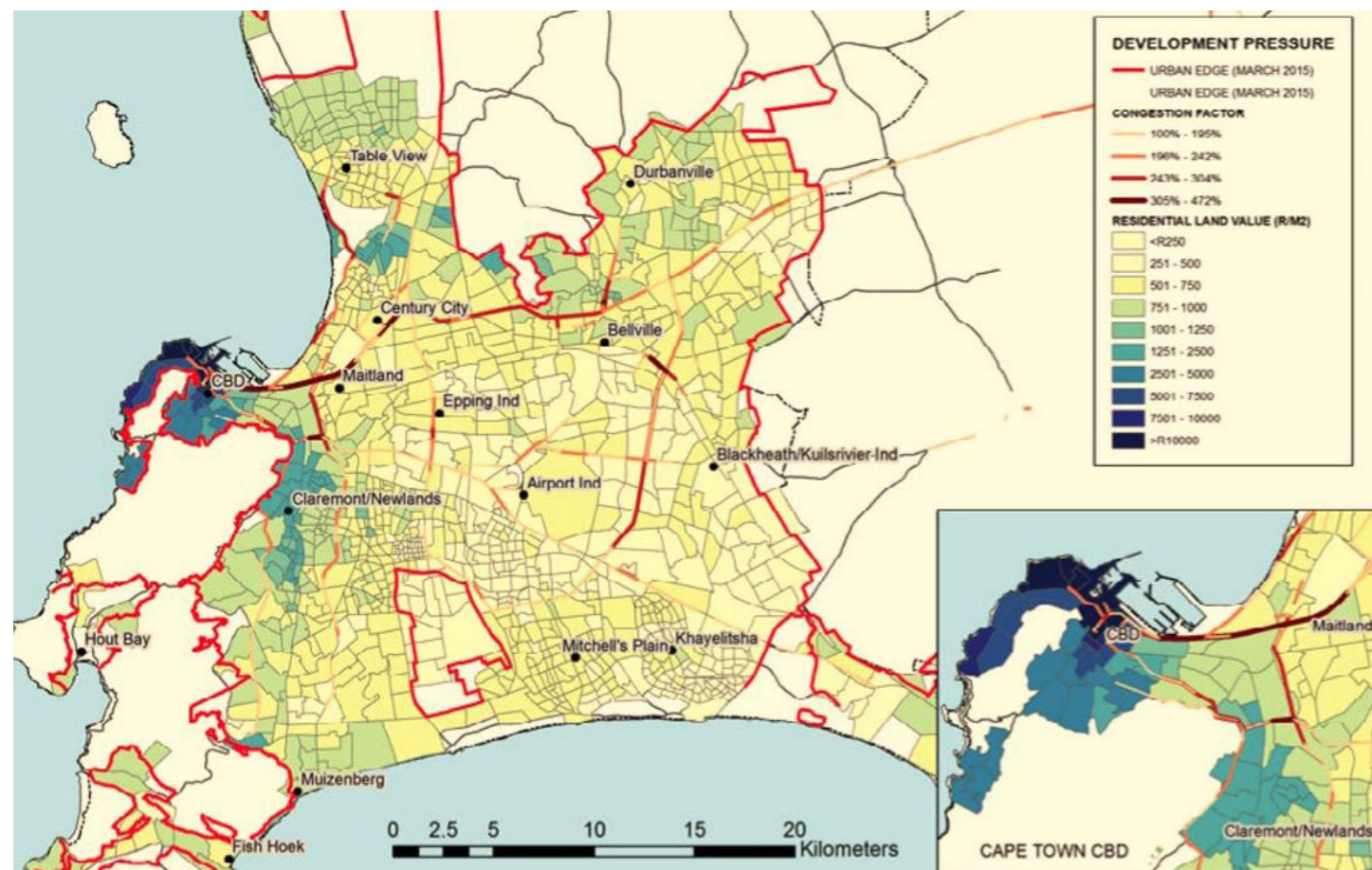
Map 3.2: Cape Town's population distribution by race, 2011 (dotmap.adrianfrith.com/).



Map 3.1: Cape Town residential density, 2017 (CoCT, 2017).



Map 3.3: Cape Town's population distribution by income, 2011 (dotmap.adrianfrith.com/).



Map 3.4: Residential land values and congestion in Cape Town, 2015 (CoCT, 2016).

Land values

However, another factor that perpetuates the pattern of income segregation is the exclusionary housing market in Cape Town. Map 3.4 shows that in 2015, residential land was cheapest in the metro south-east region, while in the CBD and southern suburbs it reached values of more than R10 000 per square metre, which is more than many low income households earn in a month.

Housing backlog

There is an overall shortage of formal housing in Cape Town, but this is exacerbated by an exclusionary housing market that pushes the poor to the urban periphery, where opportunities for employment and upliftment are scarce. In 2011, Cape Town's housing backlog was estimated at 350 000 households, which is 28% of the city's total households (CoCT, 2011). As Table 3.1 shows, the city represents more than half of the total housing backlog and informal settlements in the Western Cape, and nearly three quarters of the households that are living informally in the Western Cape are in Cape Town. Although government has attempted to address Cape Town's housing shortage through RDP and BNG housing projects, these have tended to be located on the urban periphery, far from economic and employment opportunities (DLGH, 2006).

The following sub-section will look more closely at these areas of economic opportunity and employment from which low-income groups in Cape Town are dislocated.

Housing	Cape Town	CT as % of Western Cape total
Backlog	350 000 units	56%
No. of households living in informal dwellings	218 780	74%
No. of informal settlements	379	57%

Table 3.1: Cape Town's housing needs in relation to the Western Cape, 2011 (Author, adapted from the DHS Western Cape annual performance plan 2015-16).

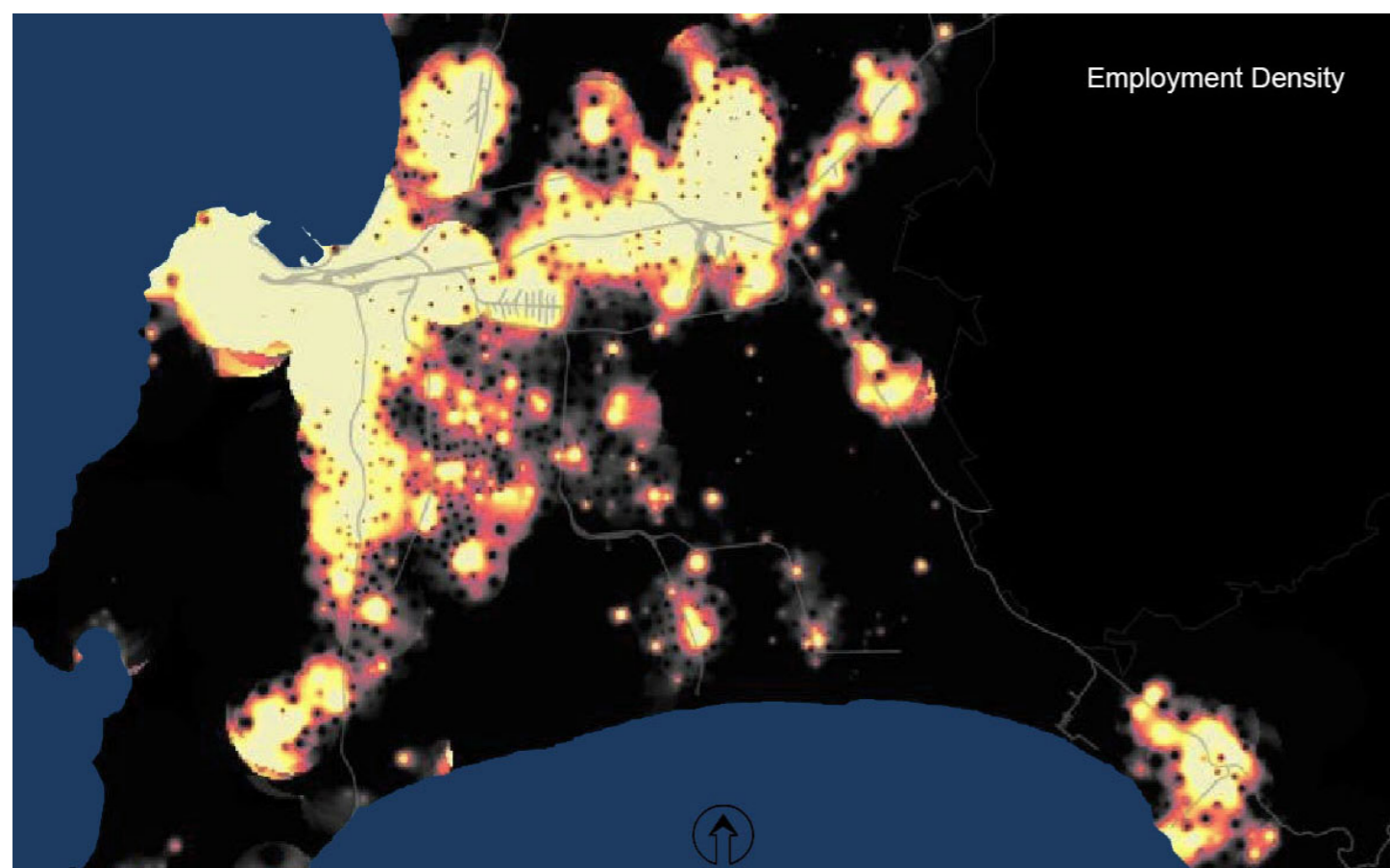
3.1.2 Economy and Employment

Cape Town's employment is concentrated in the City Bowl and the southern and northern suburbs corridors, as shown in Map 3.5. This is in stark contrast to the areas of highest residential density and lowest household income shown in Maps 3.1 and 3.3. This section will explore the nature of Cape Town's employment and the economy it is part of, looking at spatial and sectoral trends of growth and decline in order to understand where the areas of economic opportunity are and what opportunities they hold.

Trends in economy and employment

Cape Town's main economic sector is finance, insurance, real estate and business services, which accounted for about a third of the city's Gross Domestic Product (GDP) in 2015 (see Figure 3.1). The 2016 Municipal Economic Review and Outlook predicts that the Finance sector will have the highest GDP growth rate of all the sectors, with an estimated average growth of 2.6% per annum between 2016-2021 (MERO, 2016). Cape Town's financial/commercial sector is concentrated in the CBD, and to a lesser extent in the northern parts of the metro on the Milneron and Durbanville axes, with the industrial activity being more spread out towards the north-east in places such as Epping and Montagu Gardens (CoCT, 2016). Map 3.6 demonstrates this distribution by showing the growth of building stock of commercial, industrial, and mixed-use nodes in Cape Town between 2005-2015.

The sector providing the most employment in Cape Town is the Trade sector, closely followed by Community/social services and Finance, as shown in Figure 3.3. These three sectors' contribution to employment has remained consistently high, while the manufacturing and transport sectors' contributions have begun to decrease. The overall trend in employment, therefore, is that there are increasing job opportunities in the tertiary sector, and declining opportunities in the secondary sector. It follows that the majority of the jobs in the city are semi-skilled and skilled (as seen in Figure 3.2), because jobs in the tertiary sector generally require a higher level of skill. As seen in Map 3.6, tertiary sector activity - especially commercial activity - is concentrated in the CBD and northern axes, which therefore suggests that job opportunities in this dominant sector will be found mostly in the these parts of the city.



Map 3.5: Employment density in Cape Town, 2017 (CoCT, 2017)

Cape Metro GDP contribution by sector, 2015

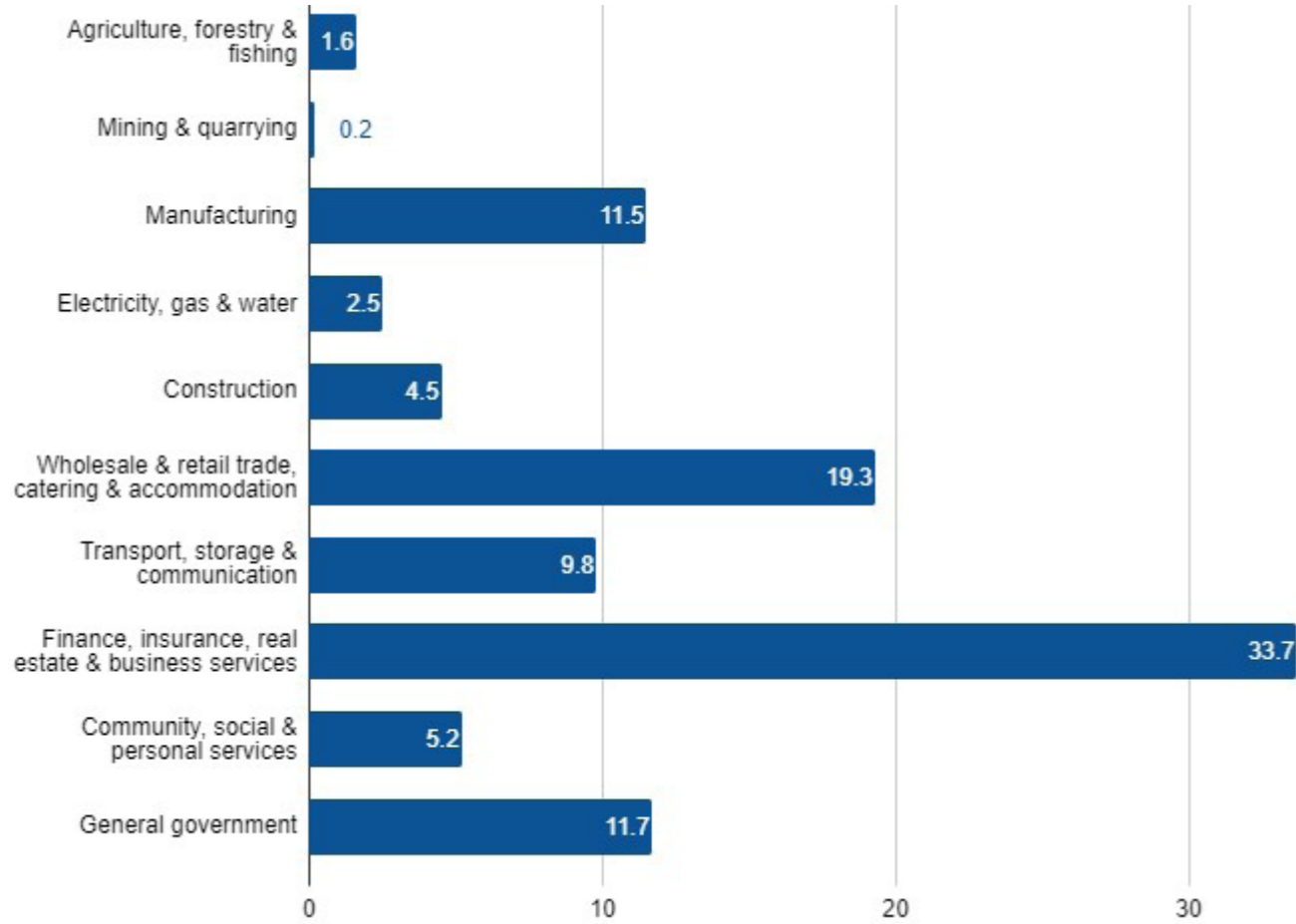


Figure 3.1: Cape Metro GDP contribution by sector, 2015 (Author, 2017; adapted from MERO, 2016)

Informal economy

Cape Town's informal economy is often left out of economic reports, as it is hard to calculate its exact status. However, the number of informal jobs in Cape Town was estimated at 161 000 in 2015 - 11.3% of total employment in the metropolitan region, and more than double the 47 000 jobs it provided in 2001 (CoCT, 2016). Informal trade is a large part of the informal economy, and it provides job opportunities for unskilled workers who might otherwise be unemployed (CoCT, 2016). While informal trade extends beyond the major formal employment centres, it does tend to concentrate around major transport interchanges, which are often located in these employment hubs (CoCT, 2012 b). The high levels of foot traffic around transport interchanges and in employment centres such as the CBD make these sites appealing to informal traders.

From the analysis of Cape Town's demographic and economic trends, we can see that there is a major spatial mismatch between the areas of highest population in the Cape Flats, and the concentration of employment/skills in the CBD and northern axes. The following section will look at the effects that this mismatch has on mobility patterns in Cape Town.

Skill level of jobs in Cape Town, 2015

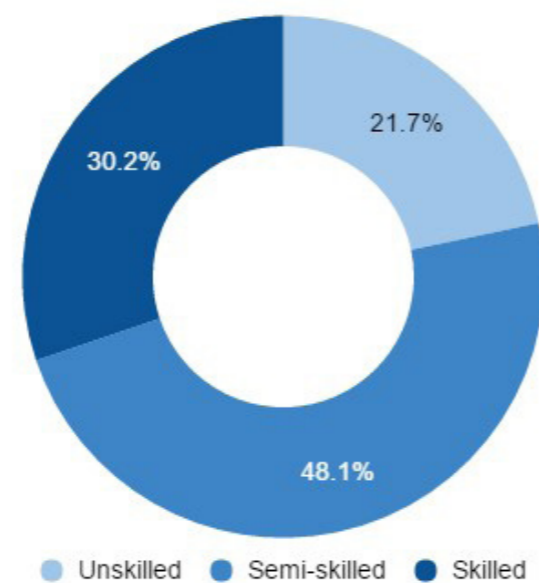
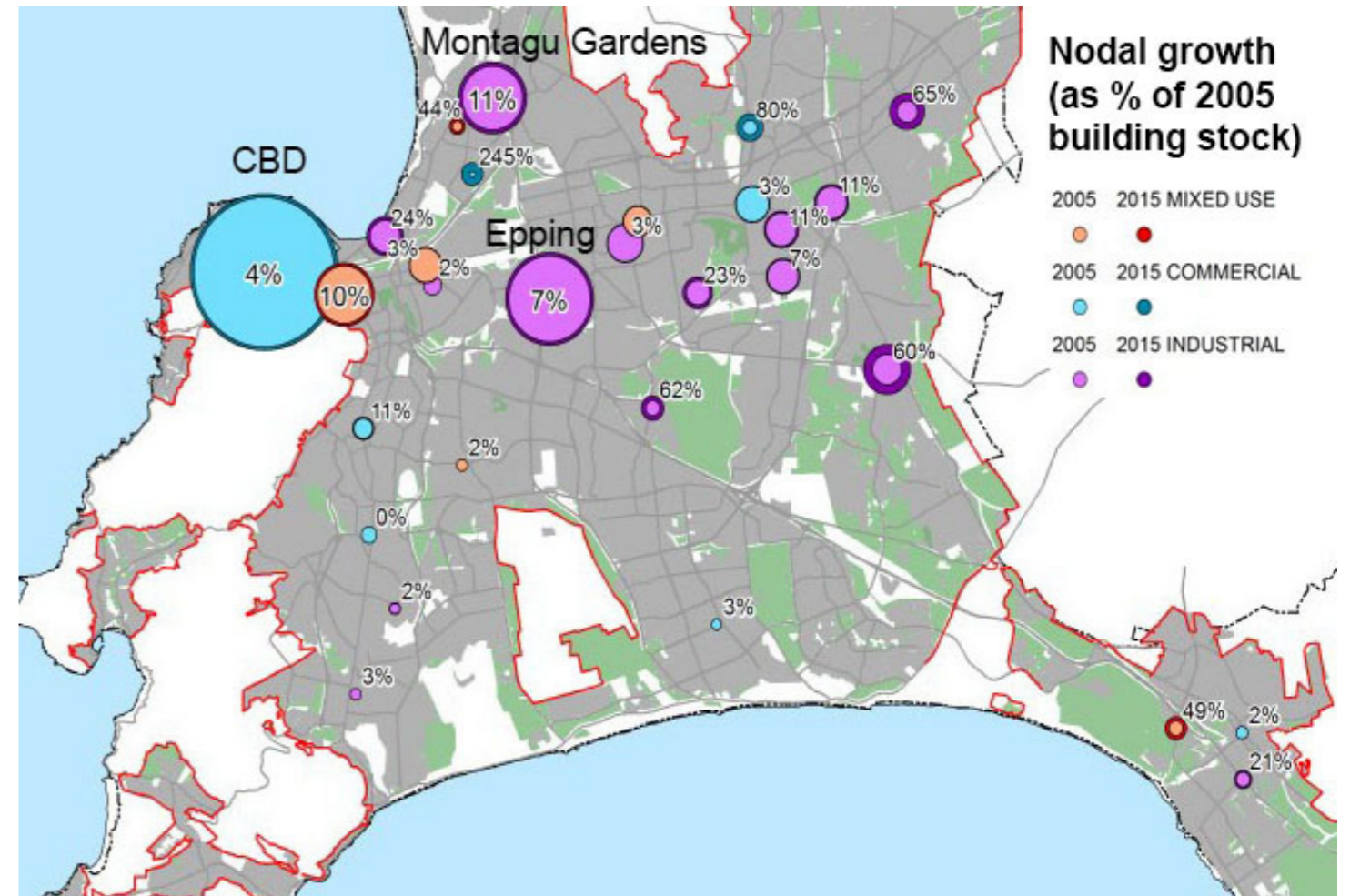


Figure 3.2: Skills level of jobs in Cape Town, 2015 (Author, adapted from data in MERO, 2016).



Map 3.6: Nodal growth in Cape Town: Commercial, industrial and mixed use, 2005-2015 (Rabe, 2016).

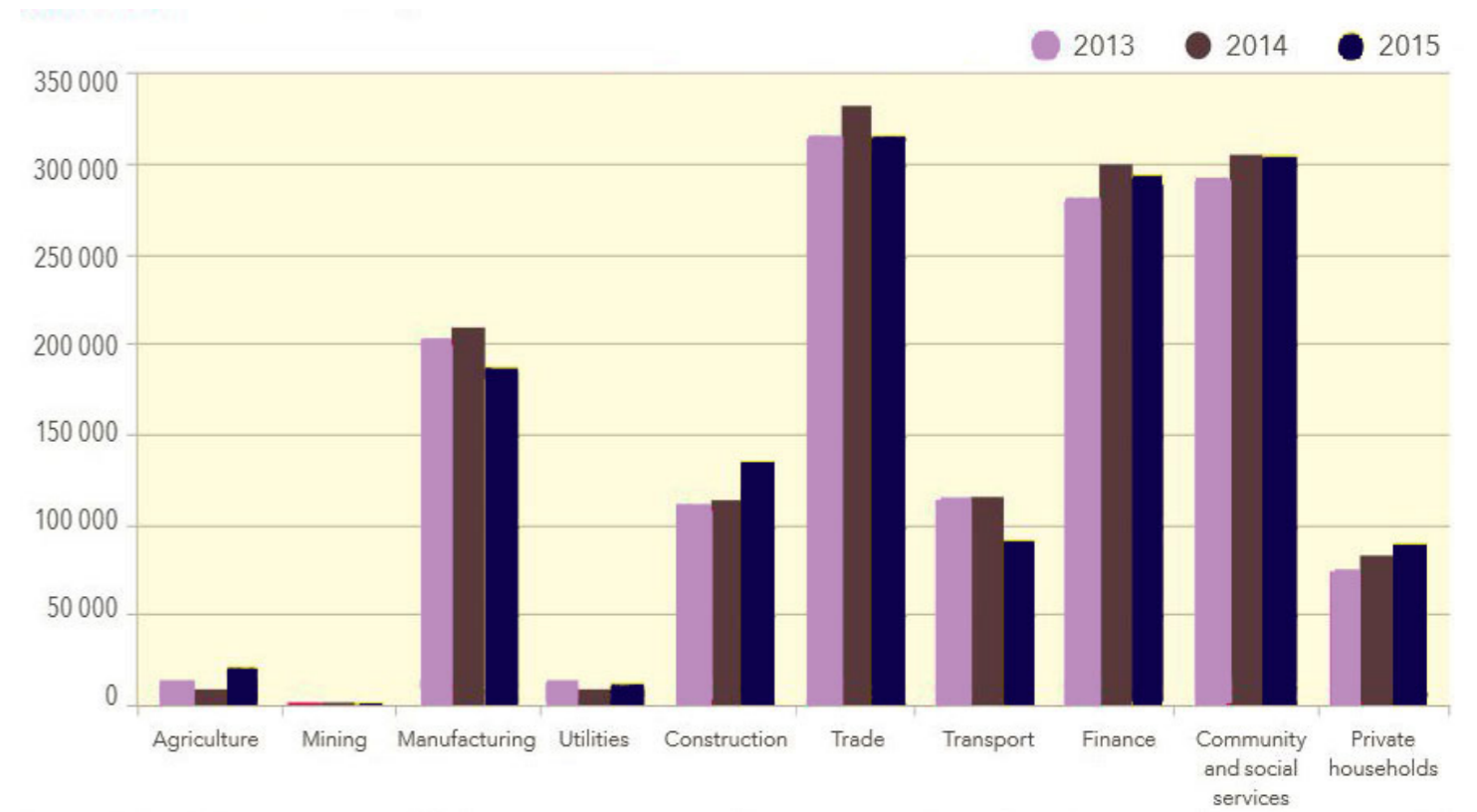


Figure 3.3: Sectoral employment in Cape Town, 2013-2015 (CoCT, 2016: 52).

3.1.3 Mobility

The spatial mismatch between jobs and people outlined in the previous sections inevitably generates large volumes of cross-city movement as people travel to and from work. This section analyses Cape Town's mobility systems to understand the extent and consequences of this.

Congestion and Dysfunctional Public Transport

Broadly speaking, this mass movement of people causes high levels of congestion in and around the areas of high employment density, especially the City Bowl (see Map 3.7). Traffic from areas of high residential density is funnelled into this area during peak hours in the morning and evening, causing a bottleneck effect. This congestion comprises all modes of road transport, but it is compounded by the rising levels of private car ownership and use in Cape Town (TCT, 2015). Figure 3.4 shows that the majority (47.3%) of workers in Cape Town use private vehicles as their main mode of transport to work. This high level of private vehicle usership can be partly attributed to the inefficient and unreliable state of the city's public transport systems.

The City has made efforts to co-ordinate the trains, buses, and taxis into an integrated public transport system. However, these modes continue to operate largely as separate entities with separate routes, schedules, and payment schemes (Schalekamp, 2010). Further, the commuter rail system, which should serve as the trunk transport system, is prone to overcrowding, break-downs, and delays due to poor maintenance and management (Ibid.). Road based public transport such as buses and taxis must then pick up the slack, which only adds to the congestion levels around the City Bowl. This dysfunctional public transport system affects low-income groups the most, as they generally cannot afford private vehicle and are therefore reliant on these unreliable public transport modes.

Lengthy, expensive commutes

This congestion and dysfunctional public transport system results in long commuting times and high transport costs. Once again, low-income households living in the south-east are the most affected because they have the furthest distance to travel. Figure 3.5 shows that the city's workers and learners travelling by train and bus spend more than an hour commuting to their place of work/learning, and even those traveling by private vehicle take almost 45 minutes to reach their destination. These figures do not include the time that public transport users spent waiting for their transport or walking from the transport stop to their destination, both of which can add more than 15 minutes to a trip (StatsSA, 2014).

These commutes are not only time-consuming, but also expensive. As Figure 3.6 shows, workers and learners using public transport spent, on average, between R344 and R629 per month on transport, while those using private vehicles spent between R967 and R1531 per month. These costs are especially problematic for low-income groups. The 2016 Integrated Transport Report found that low-income households in Cape Town spent an average of 45% of their income on transport, leaving only 55% of their income to cover essential costs such as food, rent and schooling (TCT, 2016). It is therefore the most economically marginalised groups who bear the cost of the spatial disconnect between jobs and people.

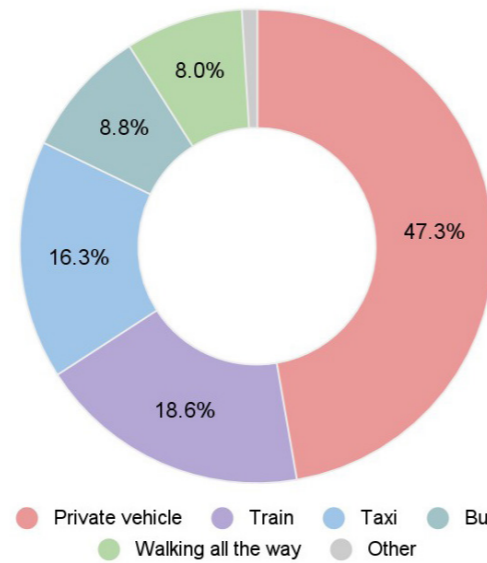
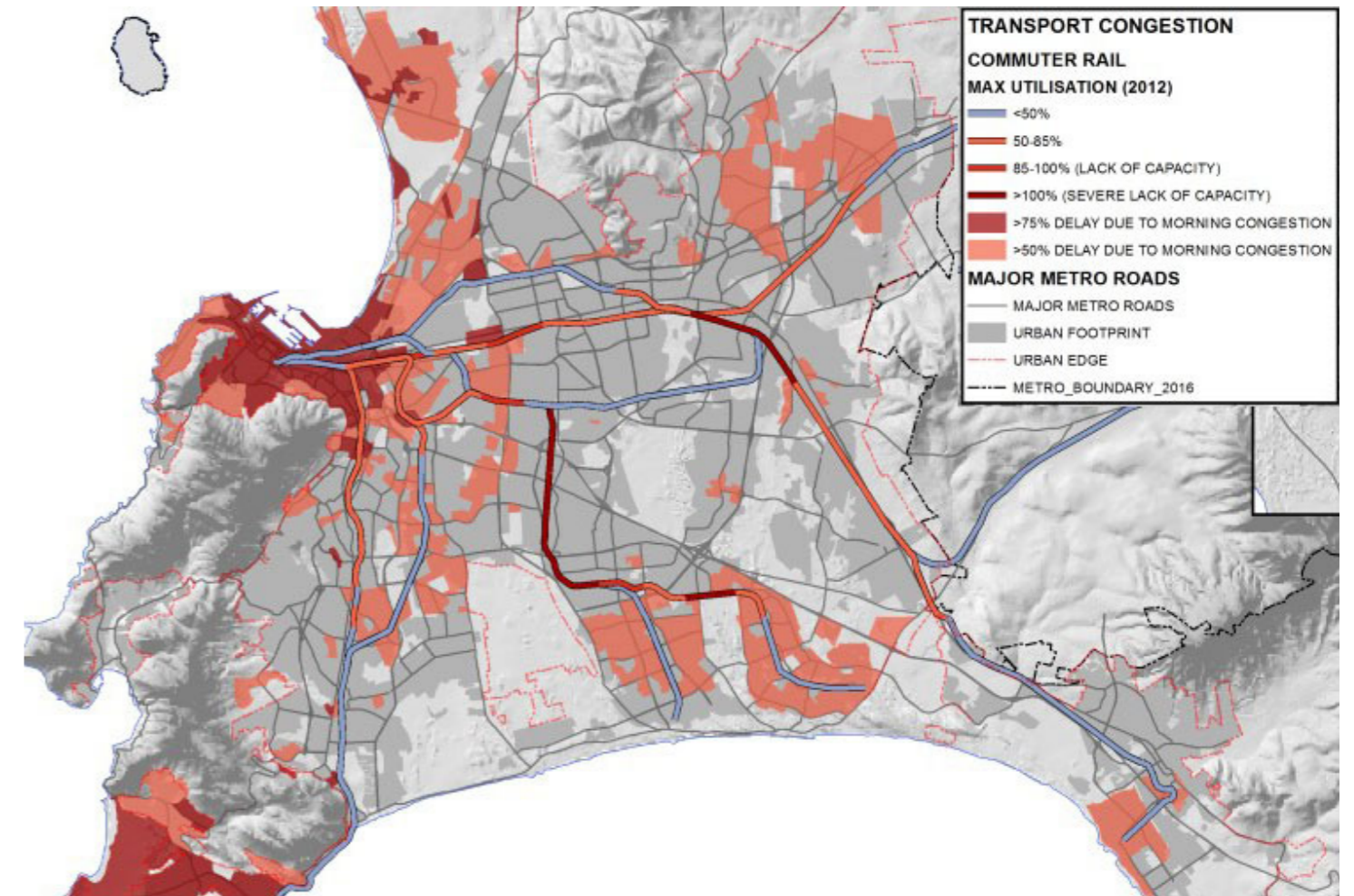


Figure 3.4: Percentage of workers by main mode of transport to work (Author, adapted from StatsSA, 2014)

3.1.4 Conclusion: The need for affordable housing close to employment opportunities

This analysis has shown that there is a spatial disconnect between areas of high residential density, but low income, and areas of economic opportunity, which results in lengthy and expensive commutes, especially for low-income groups who live on the urban periphery. Sinclair & Turok (2012: 391) argue that this "physical disconnection between jobs and population" ultimately exacerbates social inequality, as it means the majority of the population must spend more time and money on travelling to and from work. Therefore, to begin reversing this pattern of inequality, there is a need for the provision of affordable housing that is close to employment opportunities.

The City Bowl has been shown to be one of these major employment centres, and so the following section will explore this area in more detail.



Map 3.7: Transport congestion in Cape Town (Rabe, 2016).

Mean travel time (minutes) of workers & learners to reach place of work/ learning, 2014

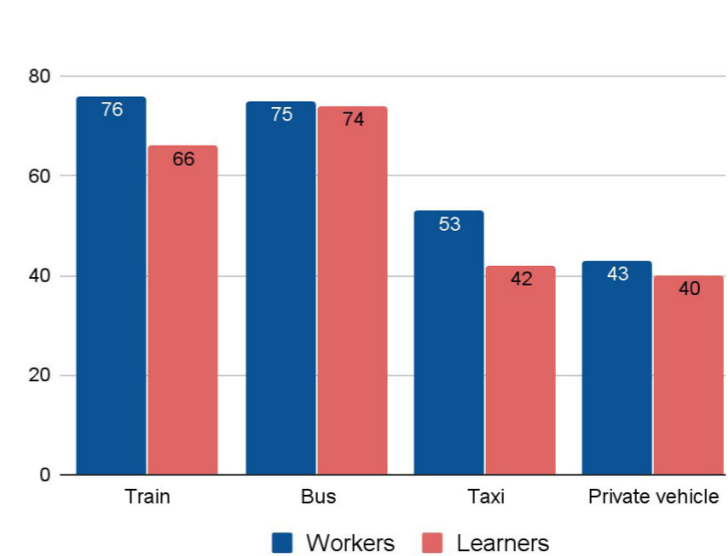


Figure 3.5: Mean travel time of workers/ learners to place of work/ learning by mode of transport (Author, adapted from StatsSA, 2014).

Mean monthly travel costs of workers & learners by mode of transport, 2014

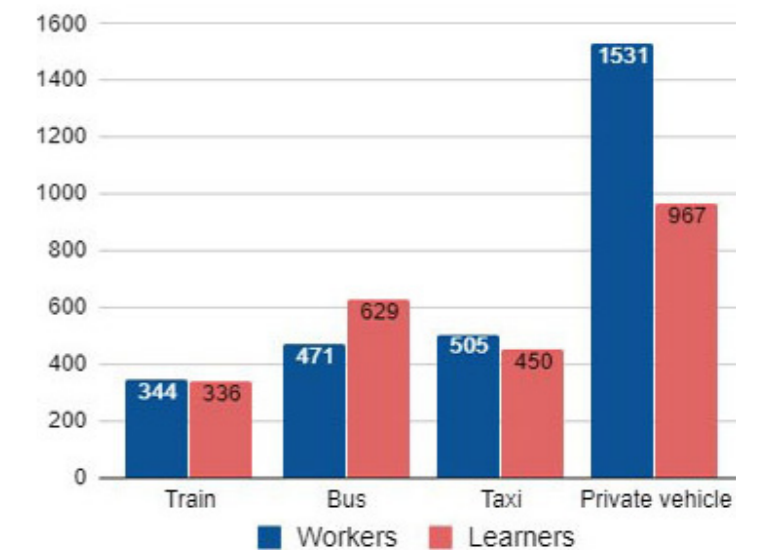
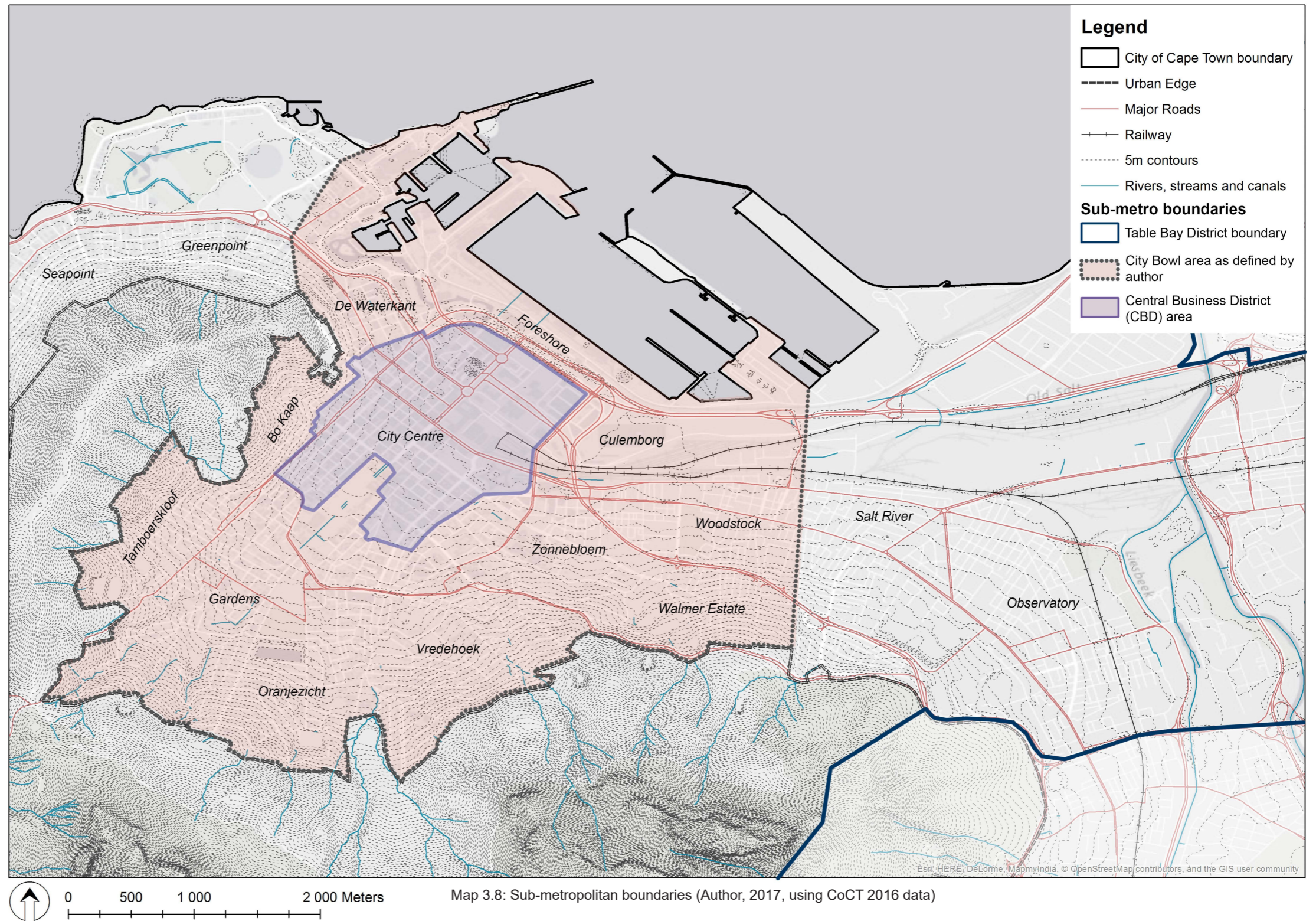


Figure 3.6: Mean monthly travel costs of workers & learners by mode of transport (Author, adapted from StatsSA, 2014).

3.2 Submetropolitan Analysis: Cape Town City Bowl

The metropolitan analysis revealed that the City Bowl had a high concentration of jobs, making it a key site for addressing the need for affordable housing close to employment centres. This section analyses the City Bowl at a sub-metropolitan scale to determine whether it is also environmentally and socio-spatially suited to this type of development. The analysis will look at the environmental and urban development patterns that shape the City Bowl, as well as the current plans for development in the area.

Because most data on sub-metropolitan areas is presented by district, I will be using data for the Table Bay District to speak about the City Bowl, even though the district boundaries extend beyond what I consider to be the City Bowl. In my view, the City Bowl is defined by both natural and economic elements. Firstly, it is enclosed by the Devil's Peak/ Table Mountain/ Lion's Head/ Signal Hill mountains that create the 'bowl' form. Secondly, it is centred around the historic CBD shown in Map 1, but also includes newer commercial areas such as the V&A waterfront, as both of these areas are important employment centres. These environmental and economic factors together inform the City Bowl boundary shown in Map 3.8.



3.2.1 Environmental Patterns

This section analyses the environmental patterns that shape the City Bowl, looking at its foundational geology and topography, and its hydrological and climatic systems. These factors have significant implications for development in the area.

Geology and Topography

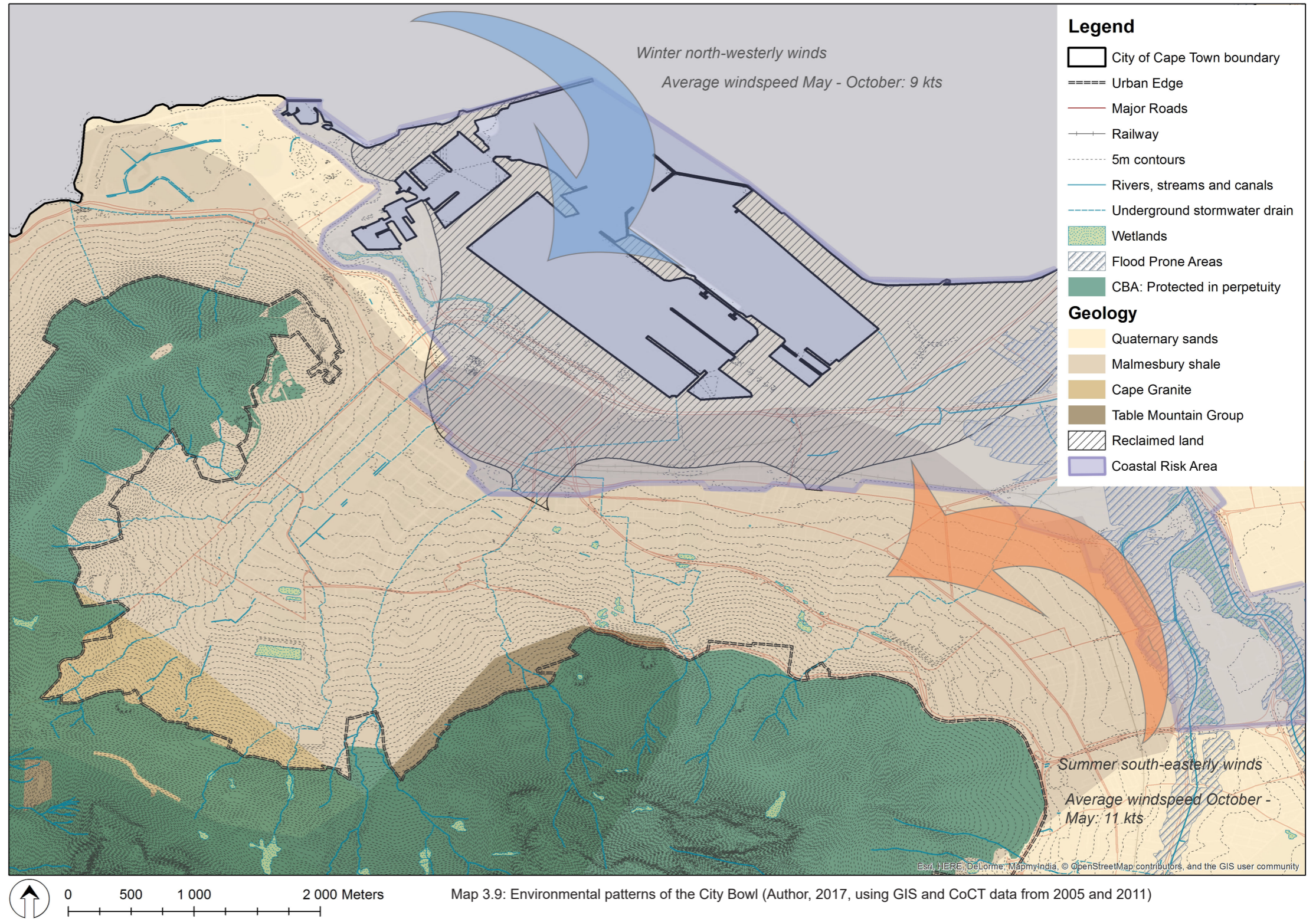
The land systems of the City Bowl inform, to a large extent, where development can take place. The steep gradients of Table Mountain's slopes make these areas hard to develop. Further, most of the slopes are protected as Critical Biodiversity Areas (see Map 3.9). The lower foothills of Table Mountain and the centre of the City Bowl are easier to develop due to the gentler gradients. Development has therefore concentrated here, where there is also a solid foundation of Malmesbury Shale rock.

However, not all of the City Bowl is founded on Malmesbury Shale. In the 1930s, the City reclaimed some 200ha of land to enable the construction of the Duncan Dock (Wilkinson, 2000). This entailed pumping sand from the ocean floor onto the oreshore and compacting it. As Map 3.9 shows, the entire foreshore area is built on reclaimed land, including most land north of Strand street (the former beach line) (Ibid.). Developing reclaimed land requires sensitive construction methods. These areas are at risk of 'hydroconsolidation', which is when groundwater levels rise in soil that is not properly compacted (Krebs & Zipper, 2009). This can require expensive, ongoing water extraction processes (Ibid.). However, it is possible to develop on reclaimed land without causing hydroconsolidation. The existing developments on the reclaimed Foreshore area have managed to avoid this issue.

Hydrology

As Map 3.9 shows, many freshwater streams drain from Table Mountain and Lion's Head/ Signal Hill into the City Bowl, but all of them have been channelled into canals or underground stormwater drains that flow straight into the sea. The concealment of these freshwater systems adds to the disconnect between land and sea by invisibilising the flows between oceanic and land water. Channelling the streams into the sea wastes valuable potable water, which could be used to alleviate the current drought.

In addition to drought, the City Bowl could also be threatened by rising sea levels. Map 3.9 shows that most of the reclaimed land is estimated to be a 'coastal risk area' vulnerable to sea level rise caused by tidal surges. However, this estimation is primarily based on the criteria of height above sea



level, and proximity to the sea (Cartwright, 2008). This does not factor in the sheltering effect that the harbour provides against strong waves. It is therefore unlikely that the Foreshore and City Bowl would be affected by tidal surges. However, development of the area should still implement proactive strategies for dealing with it (CoCT, 2012 c).

Climate

A major feature of the City Bowl's climatic system is wind. Being situated on the Atlantic coast, the City

Bowl is exposed to the cold, north-westerly winds that bring in storms during the winter months (see Map 3.9 and Figure 3.7). In summer months, strong south-easterly winds blow the storm clouds back out to sea. Although the City Bowl is partially sheltered from the southerly winds by Table Mountain, if the winds come from a more easterly direction they can bypass the mountains and get channelled into the CBD, reaching speeds of 10-12 knots. This has implications for building orientation and the design of public open spaces.

Month of year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Dominant wind direction	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Wind probability >= 4 Beaufort (%)	53	49	42	33	27	28	33	32	39	45	48	50
Average Wind speed (kts)	12	12	10	9	8	9	9	9	10	11	12	12
Average temp (°C)	24	24	22	20	18	16	15	16	17	19	21	23

Figure 3.7: Table Bay monthly wind speeds and directions, averaged from 2002-2017 (https://www.windfinder.com/windstatistics/table_bay).

3.2.2 Urban Development Patterns

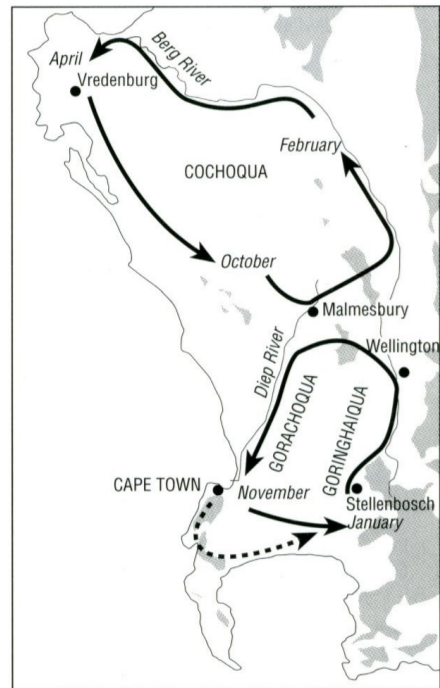
This section will continue the analysis of the City Bowl by looking at its urban context, and how this has developed in the natural setting described in the previous section. First, it will briefly outline the historical development of the area, before moving on to its present-day patterns and trends of the movement systems, economy, facilities, and residential settlement.

3.2.2.1 Historical Development

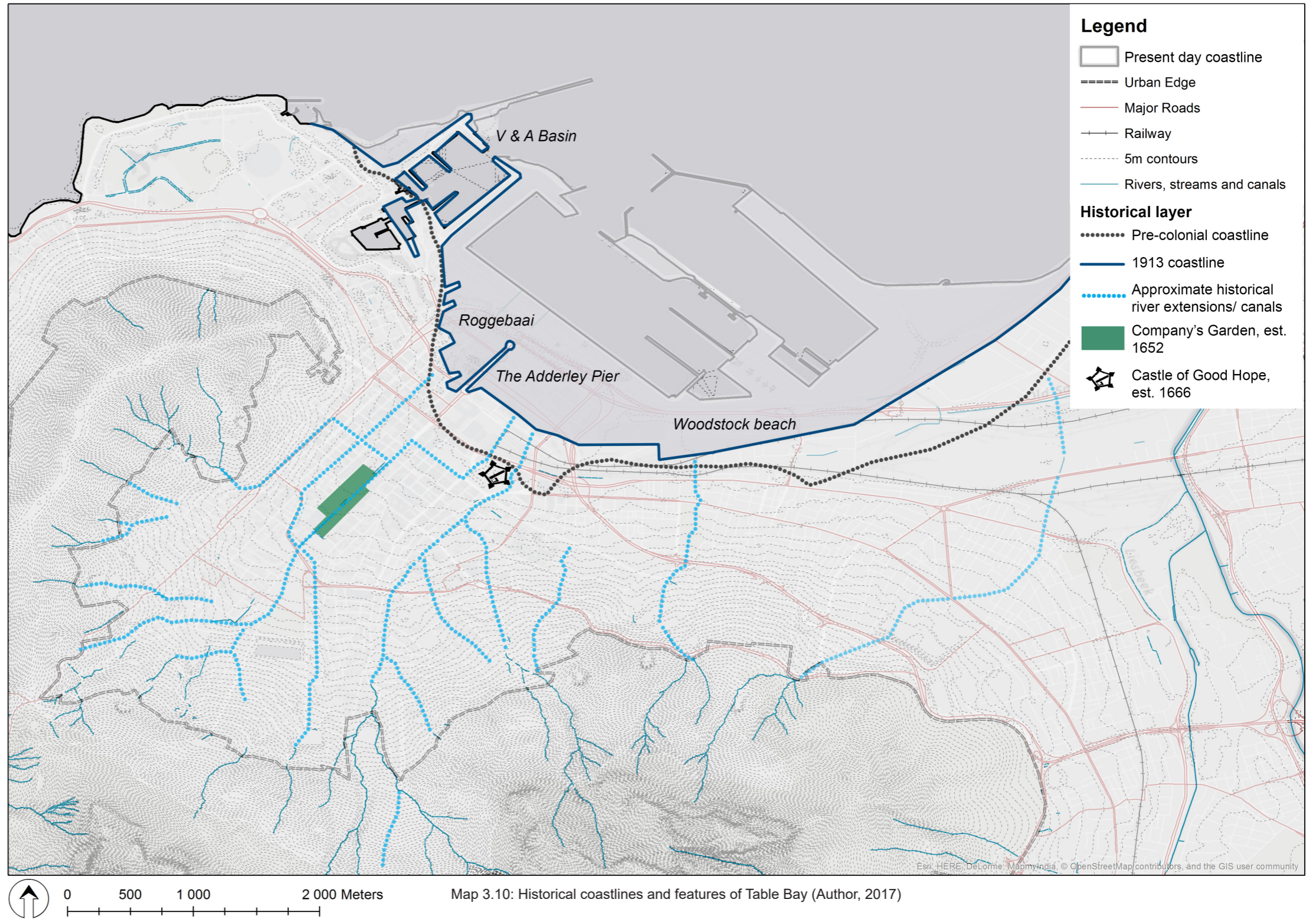
This section provides a brief overview of the role of the City Bowl in the history of Cape Town from pre-colonial times to the present day, with a focus on the foreshore and harbour developments of the twentieth century.

Pre-colonial history

There is very limited documentation of Cape Town's pre-colonial history, but before colonisation, the Cape Peninsula was home to the Khoi people (Worden et al, 1998). The Khoi were migratory herders, and Map 3.11 shows how they moved around the Cape Peninsula at different times of the year, stopping by the City Bowl area for the summer months. As seen in Map 3.10, the Table Bay area historically had an abundance of rivers and streams draining from Table Mountain, and this made it a popular site for Khoi people to settle and graze cattle (Ibid.). The City Bowl is therefore an important site of Cape Town's pre-colonial history.



Map 3.11: Estimated pre-colonial Khoi transhumance patterns in and around the Cape Peninsula, c.1500s (Worden et al, 1998: 16).



Map 3.10: Historical coastlines and features of Table Bay (Author, 2017)

Colonial rule: 1652 - 1910

In 1652, Van Riebeeck was sent to the Cape by the VOC (Dutch East India Company) to establish a refreshment point for ships sailing between Europe and South-East Asia. A small fort was constructed from mud and wood - later to be replaced by the stone castle that still stands today - and the beginnings of Company's Gardens were laid out to grow fruit and vegetables (as seen in Map 3.12). Development was laid out according to a north-

east facing grid pattern. Residential areas initially spread west of the castle towards Signal Hill, and farms were established closer to the foothills of Table Mountain (Worden et al, 1998). During the period of colonial rule that ensued, the City Bowl became more densely occupied as the population grew. Agricultural activity therefore shifted towards the southern suburbs. The Industrial Revolution took place while the Cape was under British rule

during the 19th and early 20th centuries, and this transformed the shipping industry. The large, steam-powered ships that were being used required bigger harbours, and in 1860, Cape authorities set out to cater to these new ships by constructing the Victoria and Alfred harbour, shown in Map 3.12 (Ibid.).

20th Century: Cape Town the 'Modern Metropolis'

The twentieth century saw some of the most drastic changes to the structure of the City Bowl and Cape Town as a whole. In the late 1930s, on the eve of apartheid, Cape Town's planning authorities embarked on two major urban restructuring projects. The first was the elimination of supposed 'slums' such as District Six and the BoKaap, with the Slums Act of 1934 (Bickford-Smith et al, 1999). These areas were mostly populated by low income people of colour, and so the forced removal of these residents to the Cape Flats paved the way for the apartheid segregation policies that would follow with the 1950s/60s Group Areas Acts (Bickford-Smith et al, 1999). Thus began Cape Town's trend of making inner city housing an exclusive entity.

The second restructuring project was the reclamation of land in the foreshore and the construction of the Duncan Dock. Land reclamation began in 1937, and the new dock was opened in 1943, but the first plan for the development of the new foreshore area was only published in 1947. It was only implemented - with major alterations - gradually over the following decade, once the apartheid regime had come to power. As Figure 3.8 shows, the original plan was for Duncan Dock to be a passenger ship terminal. The Foreshore was to act as a "gateway" to the rest of the city with large boulevards, plazas and parks creating a gradual transition from sea to land to city (Bickford-Smith et al, 1999). However, the SA Rail Association wanted the new Cape Town train station to be moved to a more central position than was originally proposed in the plan shown in Figure 3.8. This dispute, together with the change of government in 1948, delayed the implementation of the Plan considerably (Ibid.). By the time the plan was revisited in the 1950s, it was clear that air travel would soon surpass ships as the main mode of international transport. Thus cancelled out the need for a passenger ship terminal at Duncan Dock (Ibid.). Further, the new apartheid government envisioned Cape Town as a "modern metropolis", inspired by the "emerging post-War view which wedded the fast-moving car with the inevitable, more hopeful, modern future" (Kane, 2011: 133). The vision for Cape Town therefore centred on creating ease of movement for cars, which ultimately meant building freeways. The original plans for ground level, medium speed boulevards along the foreshore were replaced with elevated highways so that cars could move through the city without traffic intersections restricting their free flow (Ibid.). This car-oriented approach created a hostile environment for pedestrians, as described by Bickford-Smith et al:

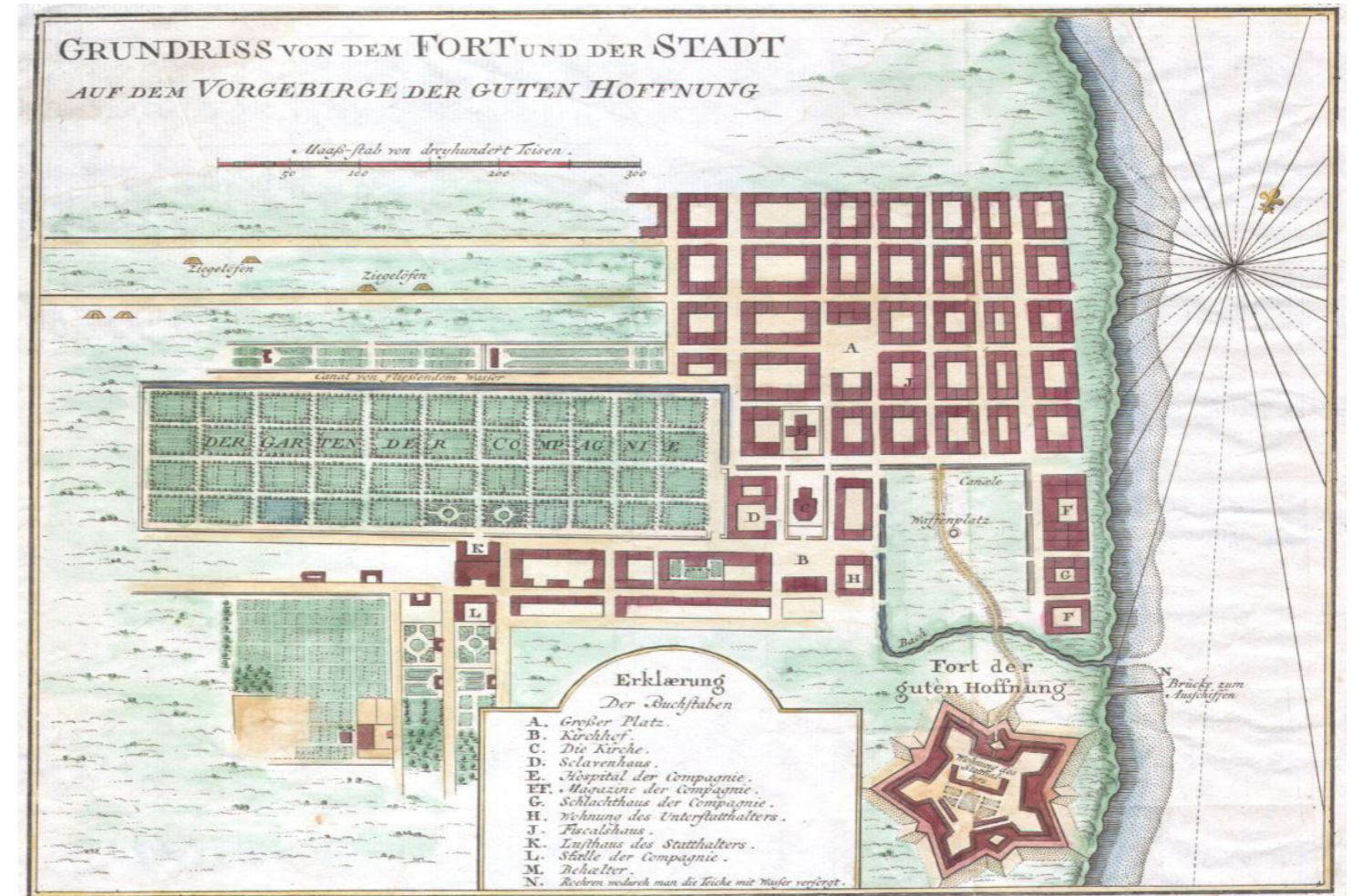
"Broad boulevards cut the foreshore up into wind-blown stretches of asphalt and concrete, filled with car parks and roaring traffic, inaccessible to pedestrians. Wind tunnels created by skyscrapers were fierce enough to blow over buses." (Bickford-Smith et al, 1999: 152).

These freeways were not only antagonistic to pedestrians; they embodied the increasingly violent apartheid politics of the 1960s - the decade in which the freeways were primarily conceived and constructed (Kane, 2011). Transport planners deliberately designed the Eastern Boulevard (now Nelson Mandela Boulevard) to cut through District Six, and used this as part of the justification for demolishing the area (Kane, 2011). The construction of the freeway amid the stark landscape of former-District Six gave the demolition a sense of finality. The permanence of the cement structures stamped out the hope of reviving the vibrant community that had once been there.

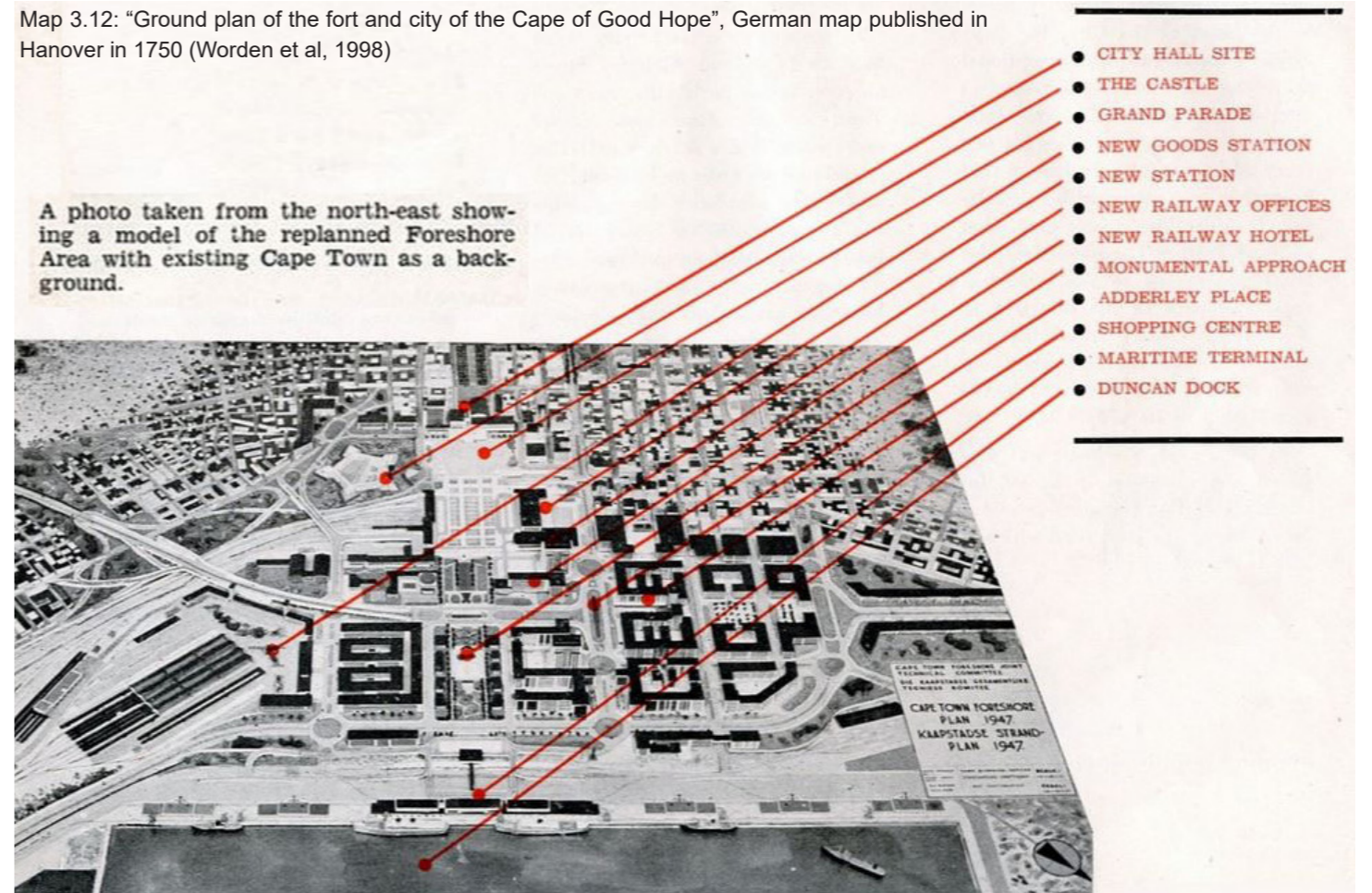
By the early 1970s, the foreshore freeway project was still under construction. However, it was now but one of several grand schemes of Cape Town's apartheid government. This included the creation of the Cape Flats to house the multitude of people who had been forcibly removed from their homes (Bickford-Smith et al, 1999). With limited funds to carry out these plans, the completion of the foreshore freeways was put on hold and eventually canned, leaving the two incomplete bridges that still stand in the foreshore today (Kane, 2011).

The developments of the twentieth century therefore left the City Bowl segregated racially through the forced removals, and separated from the sea by the foreshore freeway precinct. Ironically, the foreshore freeways ultimately caused more congestion in the city, rather than creating the seamless flow of traffic envisioned by the twentieth century transport planners (Kane, 2011). This congestion, as well as other mobility issues in the City Bowl, will be analysed in the following section.

Figure 3.8 (right): Photograph of the 1947 Foreshore Plan model (<https://www.flickr.com/photos/hilton-t/sets/72157623774559774/with/4493742156/>)



Map 3.12: "Ground plan of the fort and city of the Cape of Good Hope", German map published in Hanover in 1750 (Worden et al, 1998)



3.2.2.2 Movement systems

Building on the history of the City Bowl and its movement systems discussed in the previous section, this section looks at the present-day movement systems of the City Bowl, including road structures, modal transport trends, and non-motorised transport (NMT).

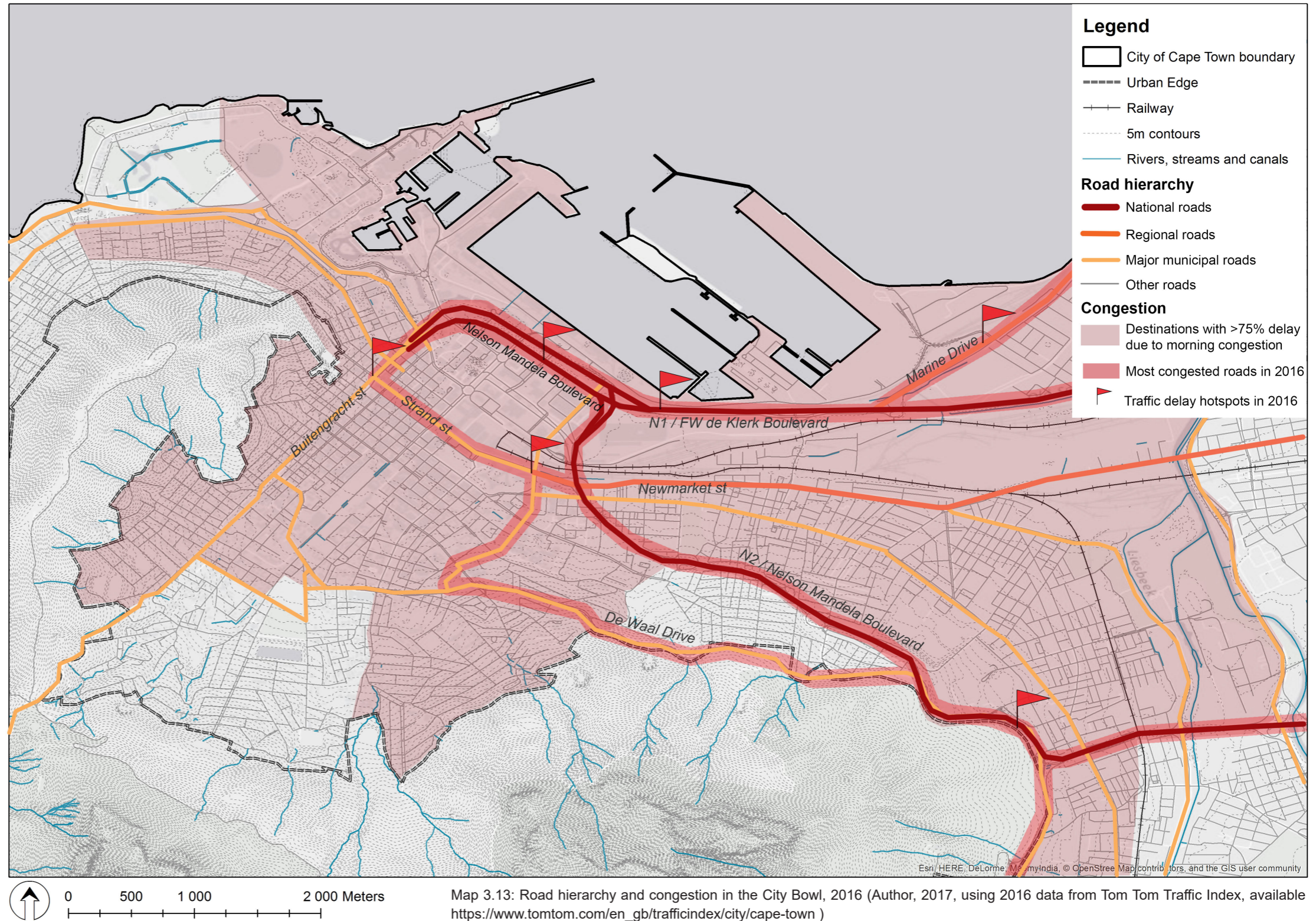
Road structure and traffic congestion

The City Bowl contains a variety of road hierarchies, including National, Regional and Municipal routes as shown in Map 3.13. This shows that the area is a well-connected, important location at a municipal, regional and national scale. However, this locational importance also results in high levels of traffic into and out of the City Bowl, leading to congestion. According to Tom Tom Traffic Index, traffic congestion in Cape Town increased by 7% between 2015 to 2016, and the city now ranks as the 48th most congested city in the world (tomtom.com, 2016). As shown on Map 3.13, some of the city's most congested roads of 2016 are located in the City Bowl, including Nelson Mandela Boulevard, FW de Klerk Boulevard, De Waal Drive, Marine Drive, and Newmarket/ Strand street. Map 13 also shows that the traffic delay hotspots are mainly situated at points where the congested freeways transition into the finer-grained, lower level roads. This is due to the "inherent problem with freeways: they concentrate traffic" rather than dispersing it among a variety of routes (CNU, 2015).

Ultimately, congestion on these roads and at these traffic delay hotspots means that people travelling to the City Bowl face delays of more than 75% during peak morning/evening traffic (CoCT, 2016). A journey that should take an hour would therefore instead take more than 1 hour and 45 minutes. This morning and evening congestion is caused by people commuting to and from work in the City Bowl. Congestion in the City Bowl can therefore be seen as a result of the disconnect between people and jobs that was discussed in the metropolitan analysis of Cape Town.

Public transport

The City Bowl is serviced by rail, minibus taxis, regular buses, and MyCiti buses. However, only 39% of commuters used public transport/NMT as their main mode of transport into the CBD in 2012 (see Figure 3.9). The remaining 61% travelled by private vehicle, thus compounding congestion levels. The limited public transport use most likely a result of the dysfunctionality of the systems described in section 3.1.3.



Map 3.13: Road hierarchy and congestion in the City Bowl, 2016 (Author, 2017, using 2016 data from Tom Tom Traffic Index, available https://www.tomtom.com/en_gb/trafficindex/city/cape-town)

There is limited updated research comparing the usership of different modes of public transport into the CBD. However, overall train usership in Cape Town has decreased in the past year, with approximately 2.7 million fewer journeys made per month in 2016/17 than the monthly rate in 2015/16 (Morris, 2017). Decreased rail ridership is often correlated with increased congestion, as people who would have taken the train instead use some form of road-based transport - be it private or public - resulting in more vehicles on roads. The decrease in train ridership is

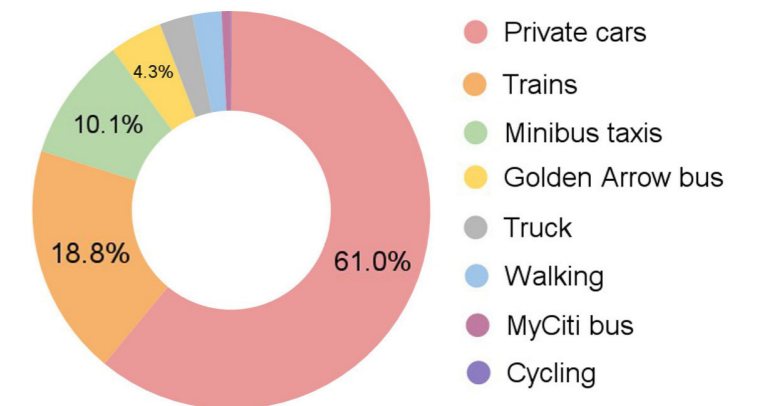


Figure 3.9: Commuters' main mode of transport into the CBD, 2012 (Author, 2017, adapted from CCID, 2013)

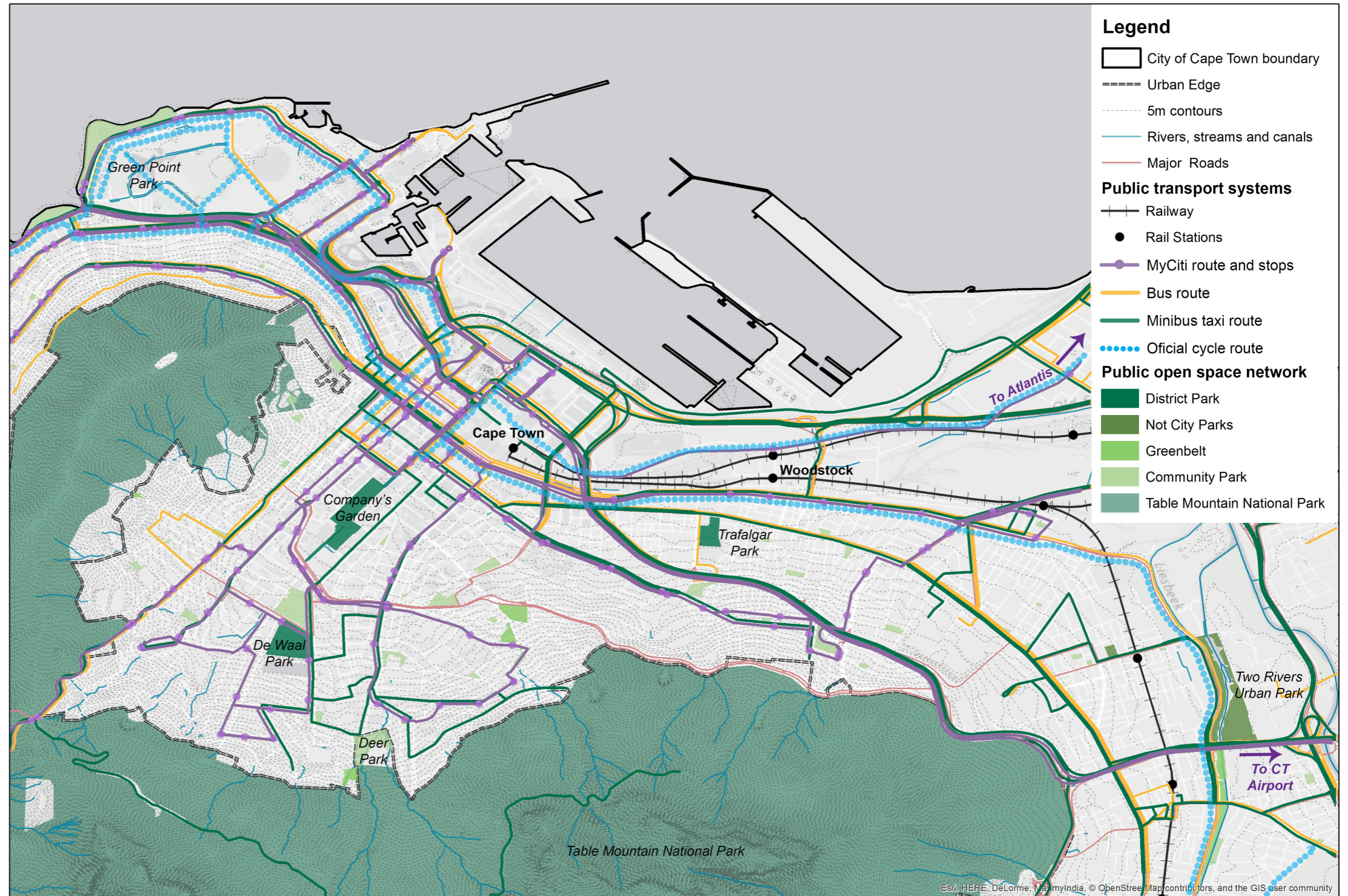
likely related to the ongoing delays in the Metrorail service in Cape Town. These are symptomatic of broader performance and institutional challenges facing the passenger rail system in South Africa as a whole. According to a draft White Paper on National Rail Policy that was put forward in June 2017, these challenges include outdated and underutilised rail infrastructure, vandalism and poor maintenance of this infrastructure, and PRASA monopolising the urban passenger rail market. One of the main suggestions for addressing these issues was for local governments to take over responsibility for the passenger rail networks within their municipality. This could potentially enable more efficient management of and investment in these services (DoT, 2017).

In contrast to Cape Town's declining train ridership, MyCiti usership has been steadily increasing since 2013, with the number of passenger journeys taken in July of 2016 being more than five times the number of journeys taken in July of 2013 (see Figure 3.10). Although this trend refers to all MyCiti routes, most routes start or end in the City Bowl, and so this overall increase in usership bodes well for the expanding MyCiti network in the City Bowl. The MyCiti current route generally aligns with regular bus routes in the area (see Map 3.14), but proposed future routes will connect the City Bowl to the northern suburbs and the Metro south-east. This will further strengthen the connectivity of the city centre (TCT, 2014).

Minibus taxis have long been serving these routes from City Bowl to Metro south-east, and there are currently 32 different taxi routes departing from the Cape Town terminus, each of which serve a different neighbourhood (CCID, 2015).

Non-Motorised Transport (NMT) and Public Open Space

Cycling and walking are the main modes of NMT, and they both rely on public open space for their movement. Public open space for pedestrians includes pavements and parks, while cyclists generally have to share the road with motor vehicles. Pavements are hard to show at a sub-metropolitan scale, and so this analysis focuses on public parks in the area. As Map 3.14 shows, the public parks network in the City Bowl is disjointed, with no green linkage between Deer Park, De Waal Park, and the Company's Garden. Likewise, the official cycle routes within the City Bowl do not link up. There is no official east-west cycle route through the City Bowl, which means cyclists are forced to join roads without cycle lanes. Even though the official cycle routes seem extensive, only small sections of these routes are painted or dedicated entirely to cyclists. This disconnection in the public open space networks



Map 3.14: Public transport and public open space networks in the City Bowl (Author, 2017, using GIS and data from CoCT, 2016, and ArcGIS Online, 2015).

and official cycle routes makes NMT inconvenient and potentially risky for pedestrians and cyclists, as they must share the road with cars where there is a disjuncture in the NMT network.

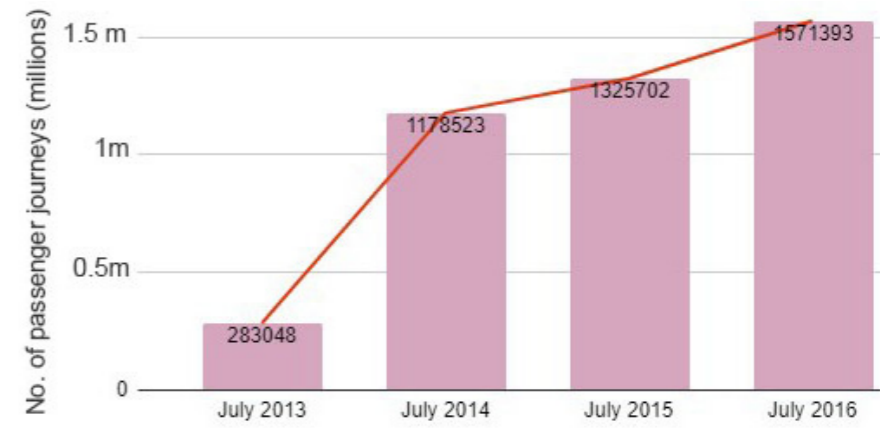


Figure 3.10: No. of MyCiti passenger journeys taken in July, 2013-2016 (<http://www.tct.gov.za/en/myciti-passenger-journeys/>)

3.2.2.3 Economy & Employment

This section looks at the economic and employment role of the Table Bay District in general and the City Bowl in particular, within the Cape Town metropolitan area.

The City Bowl's spatial economy is dominated by commercial areas, as seen in Map 3.15. Commercial activity - including informal trading - is concentrated in the historic CBD and the V&A Waterfront, surrounded by mixed-use residential-commercial areas. Industrial activity is concentrated around the port and north-east suburbs. The clustering of these commercial centres facilitates interaction and the sharing of ideas and resources between firms, which generally increases business productivity and innovation (Sinclair-Smith & Turok, 2012). This is especially important for economies that are predominantly tertiary sector-based, such as Table Bay's economy (Ibid.). Figure 3.11 shows that the district's economy is composed primarily of tertiary sector industries such as retail, finance, and community/ government services. Together, these contributed 82.6% of the district's GDP in 2015 (MERO, 2016).

As a tertiary-dominant economy, it follows that Table Bay's formal employment is mainly semi-skilled and skilled, as shown in Table 3.2. Given this dominance

Economic sectors by % contribution to Table Bay's GDP, 2015

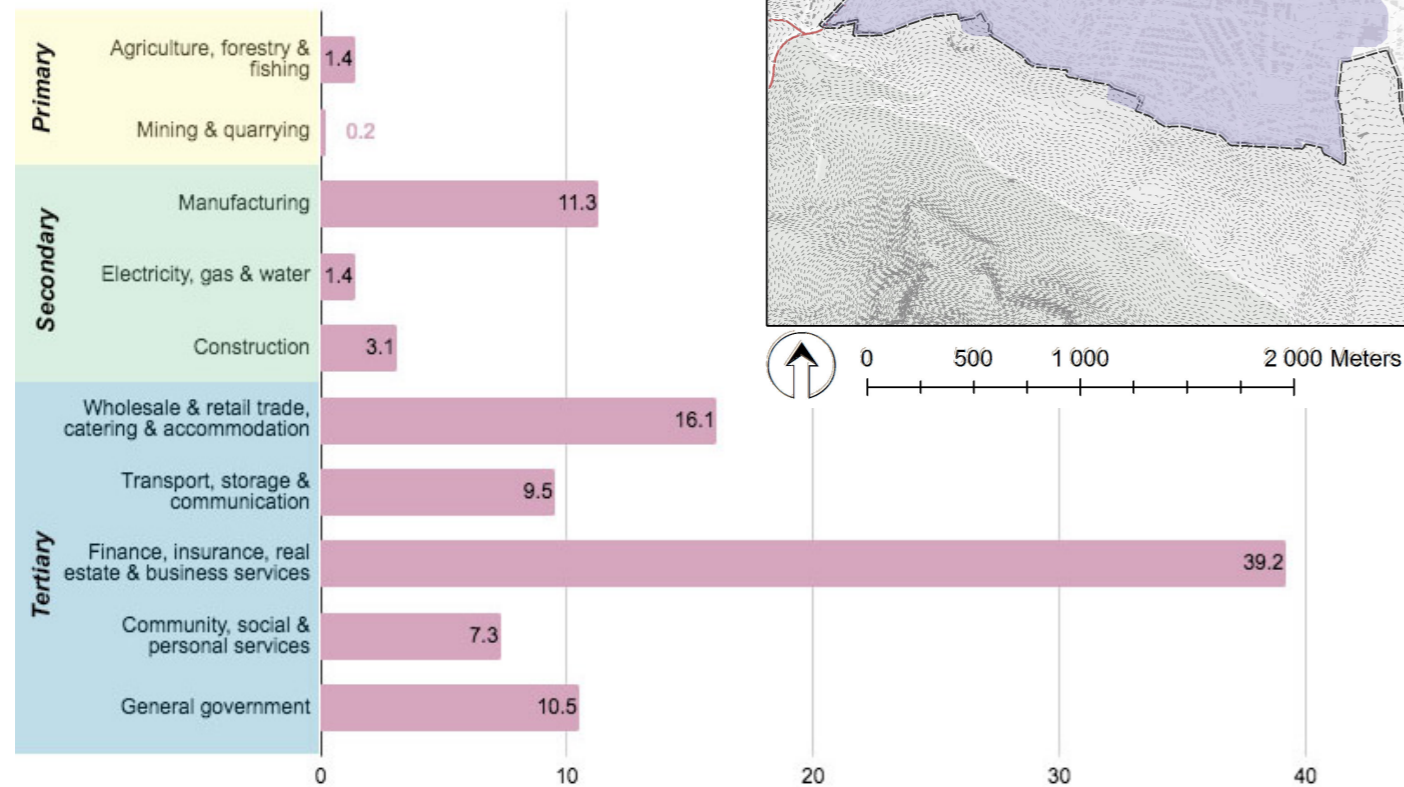
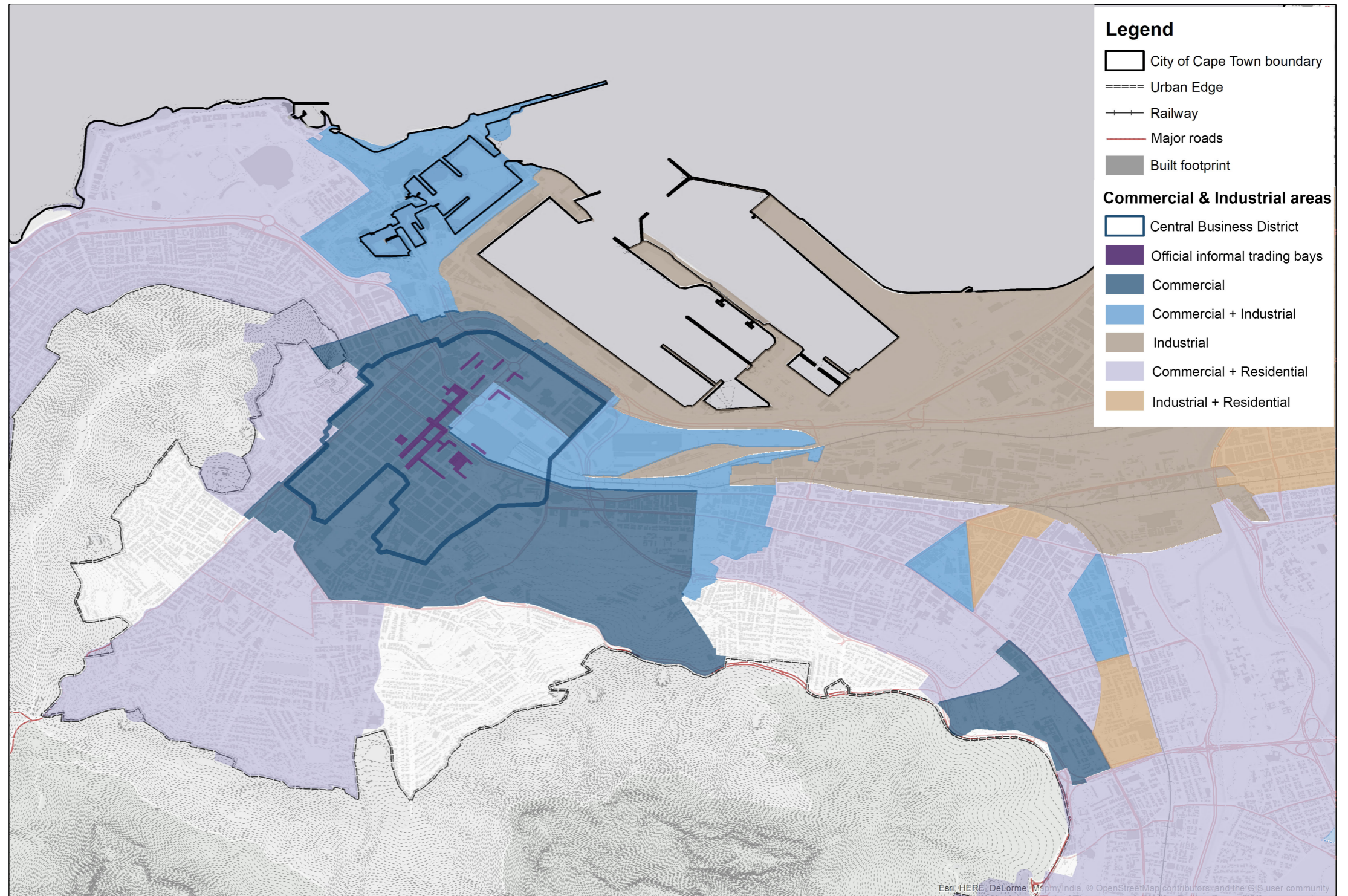


Figure 3.11: Economic sectors by % contribution to Table Bay's GDP, 2015 (Author, adapted from 2015 data in MERO, 2016).



Map 3.15: Commercial and Industrial areas in the City Bowl (Author, 2017, using GIS and data from CoCT, 2016)

Formal employment by skill	Skill level contribution (%)		Number of jobs 2015
	2015	Average growth (%) 2004 - 2015	
Skilled	41.7	0.5	35 501
Semi-skilled	42.6	0.3	36 265
Low skilled	15.7	-1.2	13 380
Total Table Bay Planning District	100	0.13	85 146

Table 3.2: Skill level of formal employment in Table Bay, status in 2015 and change 2004-2015 (MERO, 2016).

of tertiary sector activity and skills in the City Bowl, it is important to maintain a cohesive central business district to maximise the benefits of clustering related industries.

“Suburban flight” and the changing role of the City Bowl in Cape Town’s economy

It is of concern, therefore, that there is a trend of businesses relocating to areas outside of the City bowl (Sinclair-Smith & Turok, 2012). The City Centre (including the V&A Waterfront) is still the dominant economic area in Cape Town, based on its turn-over, payroll and number of companies (see Figure 3.12). However, the rise of secondary centres such as Bellville and Century City in Tygerberg and Blaauwberg (see Figure 3.13) shows that the City Centre is threatened by “suburban flight” (Pirie, 2007: 125). In pursuit of cheaper offices and shorter commutes to work, businesses are relocating to suburban areas of Cape Town. Although decentralisation has been happening since the 1980s, it increased in the early 2000s with the arrival of large retail and office developments in the northern suburbs (Pirie, 2007). Further, the District Six removals left a hole in the City Bowl’s consumer base, as well as its socio-spatial fabric (Sinclair-Smith & Turok, 2012). This loss of residential space for workers and consumers in the City Bowl puts it on a backfoot in the context of this growing desire for mixed-use business developments. The City Bowl now faces stiff competition from suburban districts with an existing residential base and more space for development.

The “spatial deconcentration” of economic activity has negative consequences for social justice, environmental sustainability, business productivity, and government finances (Sinclair-Smith & Turok, 392). Firstly, the shift of firms to the northern suburbs does not make employment more accessible to the majority of the population living in the south-east (Ibid.). Secondly, low-density office developments on the “urban fringe” do not reduce commuting distances (Ibid. p.392). In fact, they are more car-oriented than inner-city offices, as there is limited public transport to these peripheral areas (Ibid.). This ultimately causes “higher carbon emissions and greater energy consumption” than inner-city offices (Ibid.). Thirdly, the fragmentation of commercial developments prevents the sharing of resources, information, and ideas (Ibid.). This undermines business growth and innovation. Finally, government resources are weakened by the demand for infrastructure for these widely dispersed sites (Ibid.).

Therefore, the ‘flight’ of business and investment from the city centre poses a threat to the stability and equity of Cape Town as a whole. To overcome this threat, it is vital that the City Bowl develops more mixed-use and residential areas that are affordable.

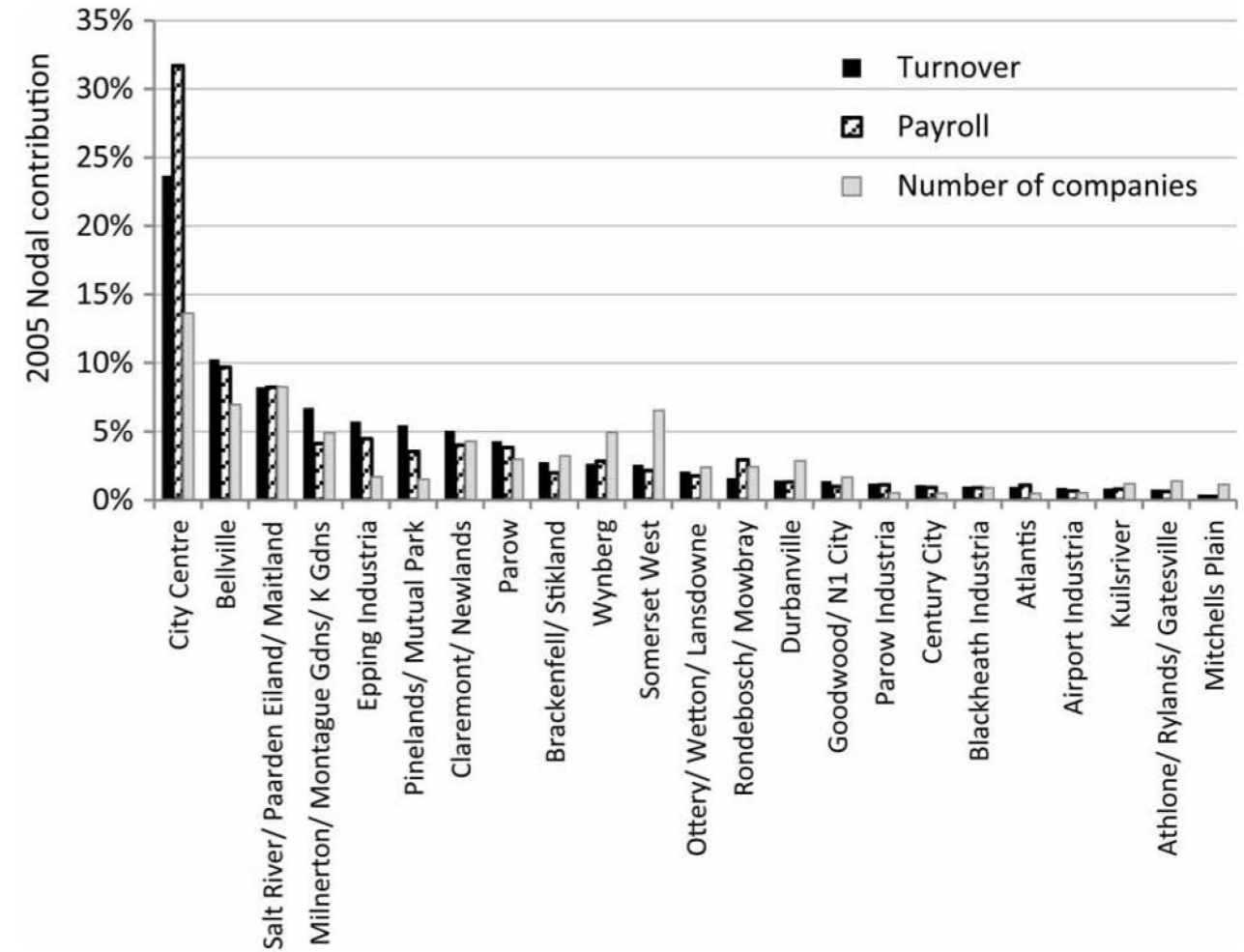


Figure 3.12: Total turnover, payroll, and number of companies for Cape Town’s 23 nodes, 2005 (Sinclair-Smith & Turok, 2012)

GDPR Growth per planning district, 2005 - 2015 (% growth per annum)

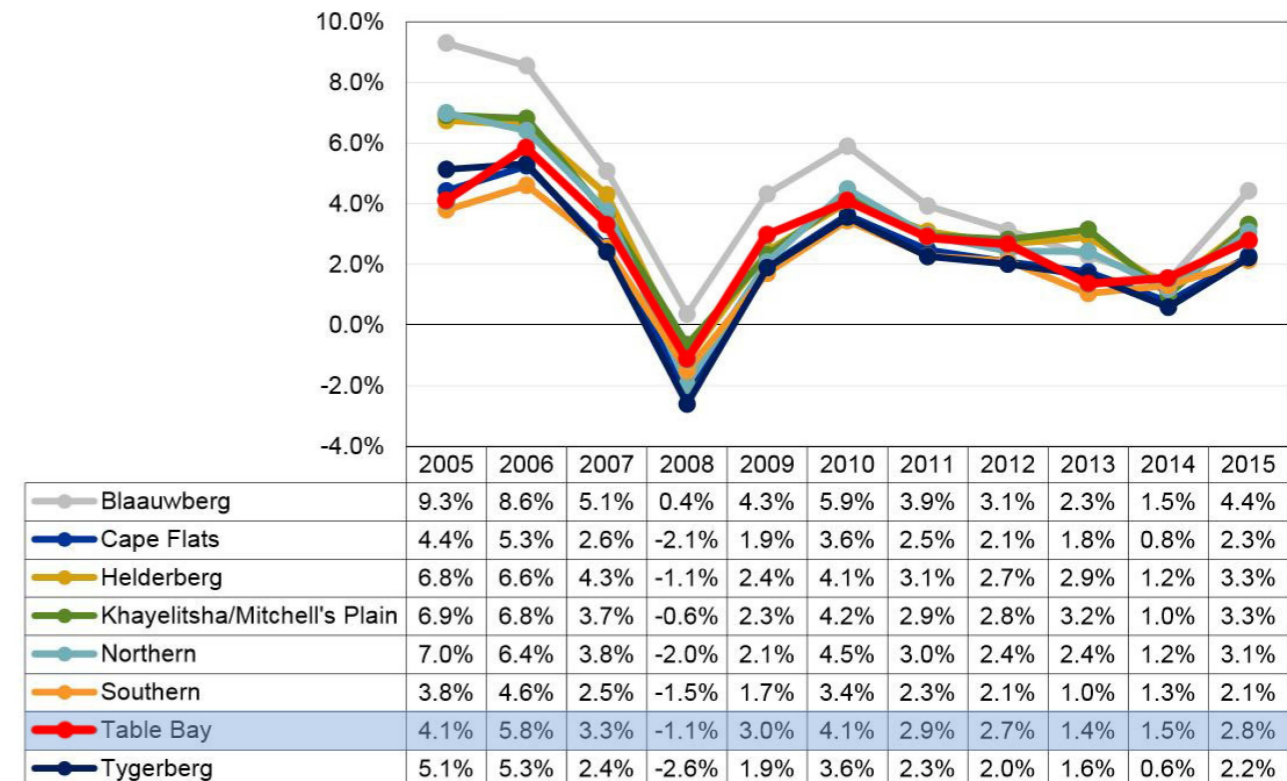


Figure 3.13: GDPR growth rate per planning district, 2005 - 2015 (MERO, 2016).

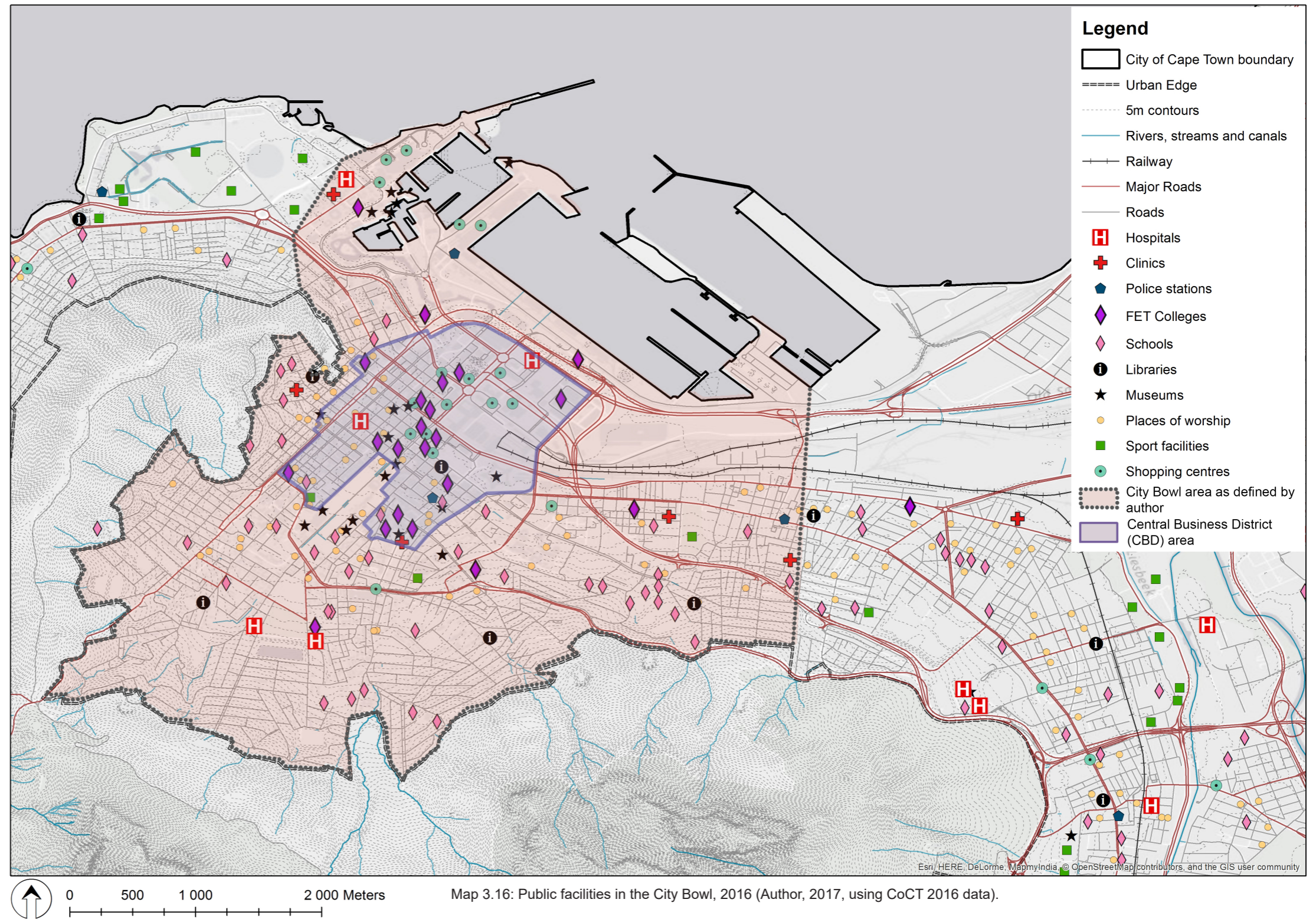
2.2.2.4 Public facilities

The City Bowl is well serviced by a variety of public facilities, as seen in Map 3.16 and Table 3.3. The number of schools, museums, FET colleges, and shopping centres are particularly high when compared to the surrounding areas shown in Map 8, and there is a relatively even distribution of healthcare facilities throughout the area. Although there are only three sports facilities within the City Bowl, there are fourteen more in the surrounding areas of Green Point and Observatory. This abundance of educational, commercial, medical, and recreational facilities make the City Bowl well-suited to residential and commercial occupation.

There are some significant patterns in the distribution of the facilities within the City Bowl area. As Map 3.16 shows, shopping centres and FET colleges are concentrated in the CBD area, while schools and healthcare facilities are more spread out towards the residential areas on the slopes of the mountains. Although the new Christiaan Barnard Memorial Hospital is close to the Foreshore, there are no clinics, schools, or shopping facilities in the foreshore area. Therefore, if the foreshore area were to increase its residential numbers, it would require more schools, shops and clinics in the area to cater to these new occupants.

Public facility type	City Bowl count
Hospitals	5
Clinics	5
Police stations	2
FET colleges	22
Schools	42
Libraries	5
Museums	14
Places of worship	57
Sports facilities	3
Shopping centres	17

Table 3.3: City Bowl public facilities count (Author, 2017).

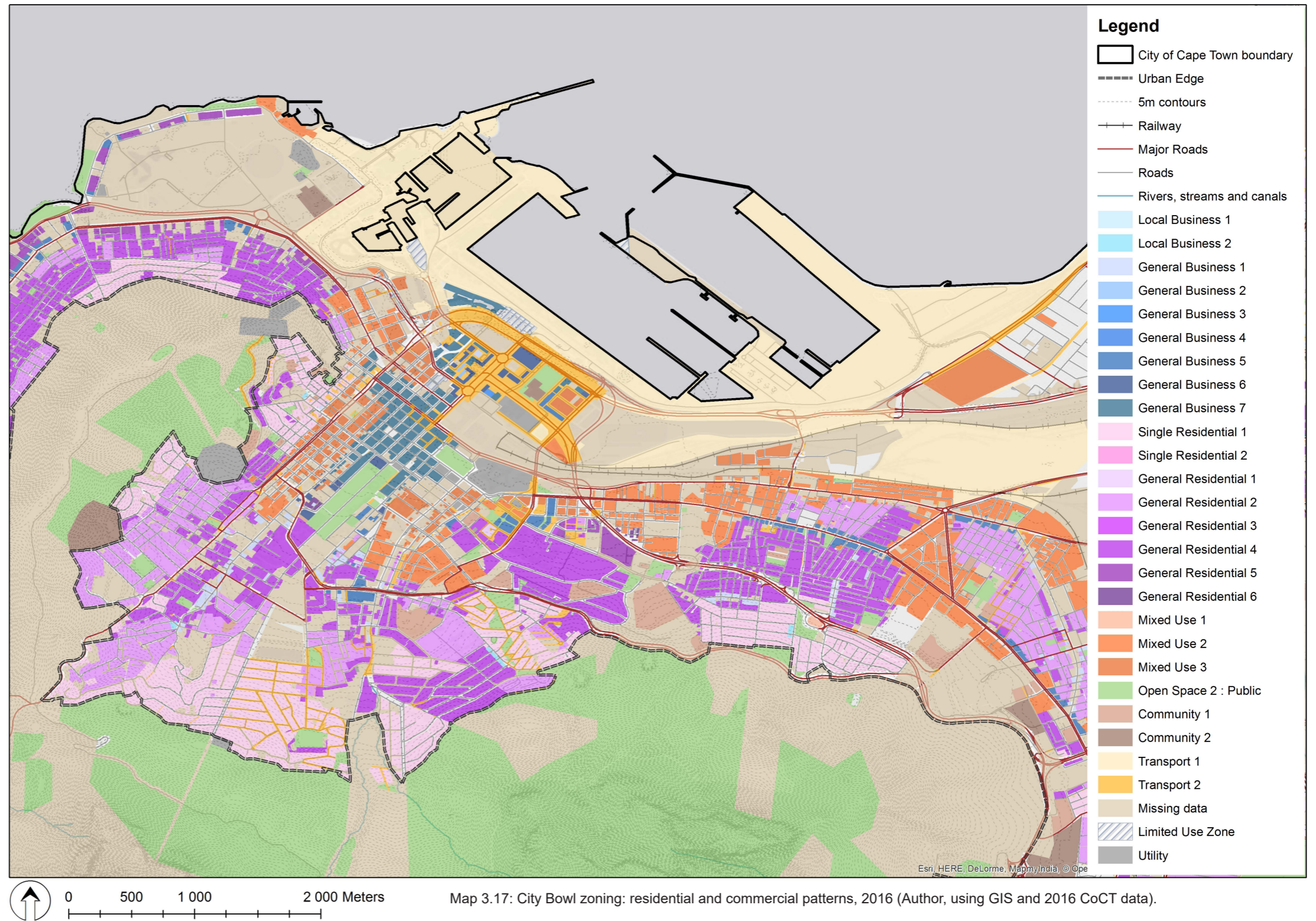


2.2.2.5 Residential patterns and market

This section will analyse the patterns and prices of residential development in the City Bowl.

Residential patterns

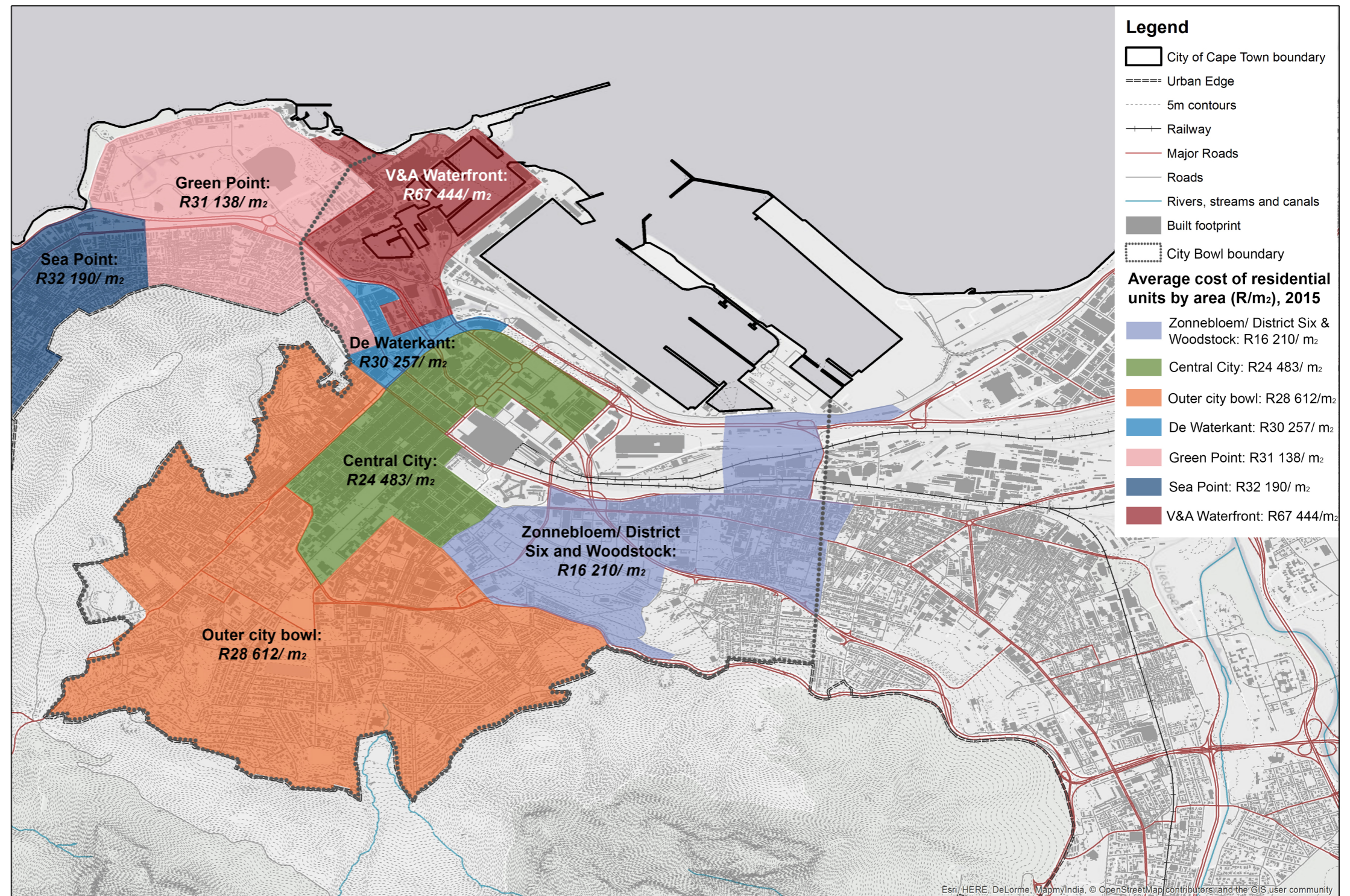
As Map 3.17 shows, residential development starts in the Mixed Use zones surrounding the commercial CBD. It then spreads out from the CBD towards the mountain foothills, gradually shifting from General Residential to Single Residential Zones. This suggests a shift from flats and other multi-storey group housing typologies to a more suburban, single dwelling unit model the further the area is from the CBD.



Residential market

Excluding the V&A Waterfront, residential properties in the City Bowl sub-areas shown in Map 3.18 were cheaper, on average, than properties in Green Point and Sea Point in 2015. Residential units in the V&A Waterfront were by far the most expensive of the areas, at R67 444 per square metre on average. Units in Sea Point and Green Point, although the next most expensive, were less than half the price per square metre of V&A units. Residential units in the Zonnebloem/District Six area had the lowest average sale price per square metre at R16 210, followed by the Central City area at R24 483 per metre squared. However, as Table 3.4 shows, the average sale price of units within the central city precinct has nearly doubled since 2013. There was a particularly sharp increase from 2014 to 2015, when the supply of units decreased. This shows that even in comparatively cheap areas such as the central city precinct, property prices in the City Bowl are rising. This implies a growing demand for residential units in the area.

Further, as Table 3.5 shows, rentals in the central city area have also increased since 2013. The average monthly rent for a bachelor flat in 2013 was nearly half that of the 2016 rent for the same unit, even when inflation is factored in. This strengthens the argument that there is a growing demand for residential units - to buy or rent - in the City Bowl.



Map 3.18: Average cost (R/m2) of residential units by area, 2015 (Author, 2017, adapted from CCID, 2016).

Year	Total value of all residential units sold	Overall average sale price	% increase in average selling price from previous year
2013	R249 million across 163 units	R1.428 million	-
2014	R296 million across 191 units	R1.552 million	8.88%
2015	R376 million across 185 units	R2.031 million	30.86%
2016	R533 million across 228 units	R2.337 million	15.06%

Table 3.4: Trends in residential property sales and prices in the Central City, 2013-2016 (Author, adapted from CCID, 2017).

Year	Dwelling unit type			
	Studio/bachelor	One bedroom	Two bedroom	Three bedroom
2013	R4 739 (+/- R5 568 with inflation)	R7 272 (+/- R8 545 with inflation)	R12 896 (+/- R15 153 with inflation)	R14 000 (+/- R16 451 with inflation)
2016	R10 608	R15 081	R22 290	R27 500

Table 3.5: Average monthly rent by dwelling unit type in the Central City, 2016 (Author, 2017, adapted from CCID, 2014 and 2017, using <http://www.inflationcalc.co.za/?date1=2013-12-31&date2=2016-12-31&amount=14000> to calculate inflation).

3.2.3 Current Plans for the Area: Establishing the Foreshore as a key development site

Given this need and demand for residential and mixed use developments in the City Bowl, this section will assess key current plans for the area to see which intended development areas could be used for these kinds of projects. Through an assessment of the Table Bay District Plan, the TCT Foreshore proposals, and Transnet's port extension plans, the Foreshore area emerges as a key inner-city site for residential and mixed-use development. However, there is insufficient attention given to the need for affordable housing and mixed use developments.

Table Bay District Plan: Spatial Development Plan and Environmental Management Framework (2012)

This plan translates the broad strategies of the CTSDF into a spatial plan for the development of the Table Bay District, which includes the City Bowl and Foreshore, from 2012-2040. Importantly, Map 3.19 shows that the Foreshore is identified as a site for "mixed use intensification", with the aim of making the coastline accessible to pedestrians while still maintaining the strong east-west linkages that the freeways provide (Table Bay District Plan, 2012). Further, the plan proposes that the Foreshore should be incorporated into a "green web" of public parks that link the mountain to the city and the sea (Ibid. p127). Part of this is a proposal to address the "barrier effect of the port and freeway system" (Ibid.). The Table Bay District Plan therefore gives strong grounds to the development of the Foreshore for a mix of uses.

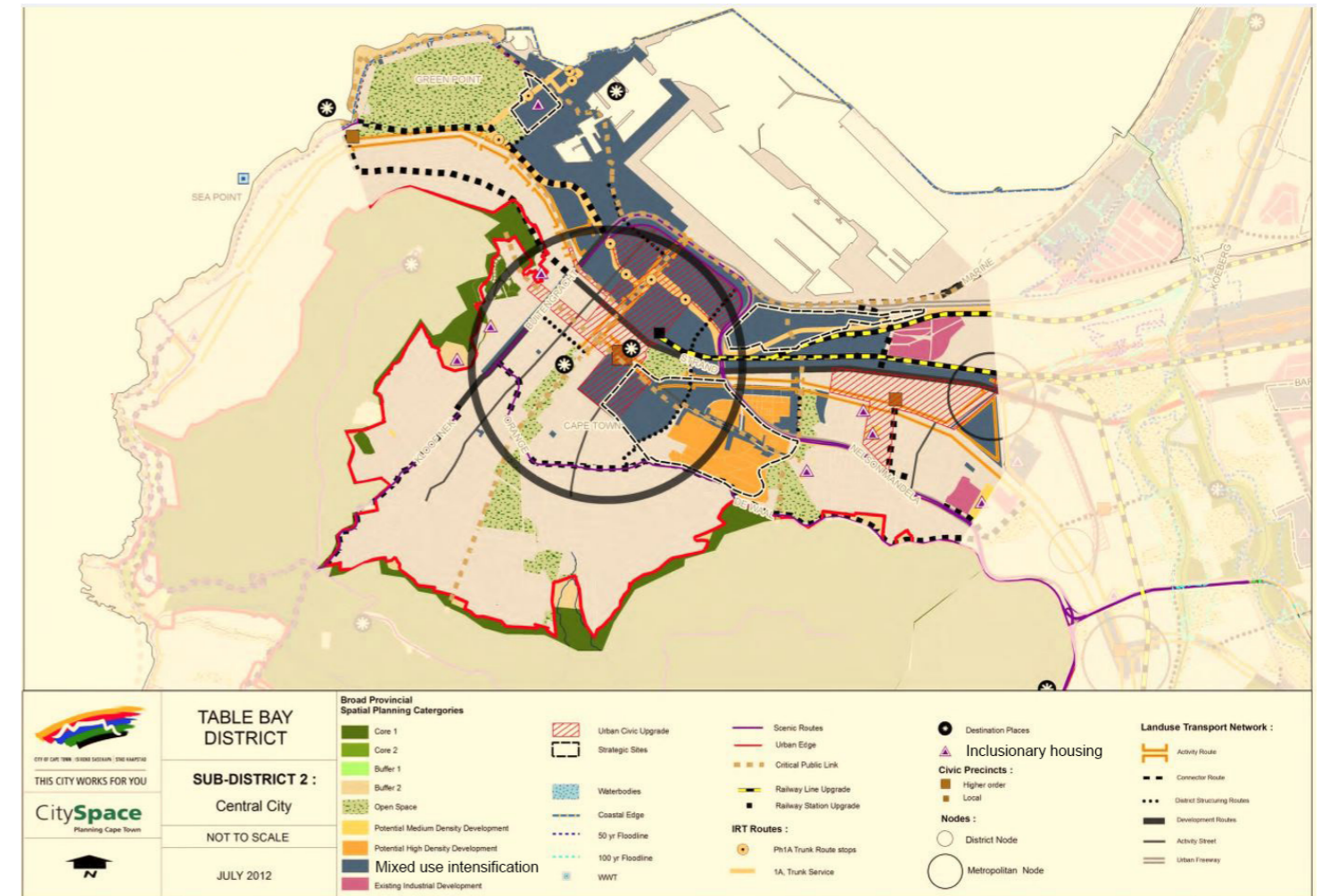
However, the Plan does not include the Foreshore in its eight suggested sites for 'inclusionary housing' in the City Bowl. The reasons for selecting these sites and not others remain unexplained, as does the term 'inclusionary housing'. Therefore, while the Table Bay District Plan identifies the Foreshore as a site for mixed-use development, it does not give enough attention or clarity to the provision of affordable housing in that site or anywhere in the City Bowl.

Transport Cape Town (TCT) Foreshore proposals (2016)

In 2016, the City committed to its intentions for developing the Foreshore by releasing a tender for the development of the site. Six proposals were submitted to City, but at the time of writing, the winner is yet to be announced. However, the most comprehensive submission in my view is Proposal A (shown in Figure 3.14). According to the proposal's promotional video, its key components are:

1. "Removal of the foreshore freeway: Bring road to ground-level, and divert traffic to other parts of the city to remove the 'funneling effect' and increase accessibility through the site."
2. "Address current congestion levels: Strengthen main roads into the city to create more entry points into the city."
3. "Enhance existing MyCiti routes: Additional route from Woodstock and District Six, via the Foreshore to the Waterfront, including the construction of two new MyCiti stations along Christiaan Barnard Street."
4. "Construct new express MyCiti shuttle from the Waterfront to park-and-ride stops in Durbanville Milnerton, with 2500 parking bays to be created in these sites. This will enable commuters to travel from Durbanville to the city in 23 minutes."
5. "Promote cycling: create cycle lanes along new Foreshore road."
6. "Additional express train services from Strand to Cape Town."
7. "Attractive walking routes and green spaces connecting the foreshore to the city."
8. "Two park and ride garages located at the two new MyCiti stops, where the freeways meet the CBD at Christiaan Barnard Street. These will provide 2000 parking bays."
9. "An inclusive city: use the land released by demolishing the freeways to provide 4000 affordable housing units that will accommodate 15 000 people."
10. "Open spaces."
11. "Social amenities."
12. "Leisure and sports facilities."
13. "Create employment opportunities."
14. "Relocate public facilities currently located on government land at Prestwich bus depot, Gallows Hill traffic department, and Ebenezer roads depot to a site new to the new MyCiti stops. Selling these sites for private development will provide the funding for the inclusive housing scheme and transport upgrades."
15. "New urban parks: redevelop part of the old freeway as an elevated park space."

Although the submission proposes 4000 affordable housing units that will be funded by selling three



Map 3.19: Central City plan, 2012 (Table Bay District Plan, 2012: 132).



Figure 3.14: Excerpt from Foreshore Proposal A promotional video (<https://www.youtube.com/watch?v=2COPXv0mFas>)

government-owned sites, it does not elaborate on how exactly this will work. Firstly, 'affordable housing' is not defined: it is unclear what income bracket it is catering to, and what model will be used. Secondly, the funding process is not fully explained, and it is questionable that the sale of three relatively small plots of land would be enough to cover the cost of 4000 housing units as well as all of the proposed transport upgrades. Overall, however, Proposal A seems to be committed to providing affordable inner city housing and addressing the city's dysfunctional mobility systems. This shows an acknowledgement that these are important issues.

Transnet Port Development Plan (2016)

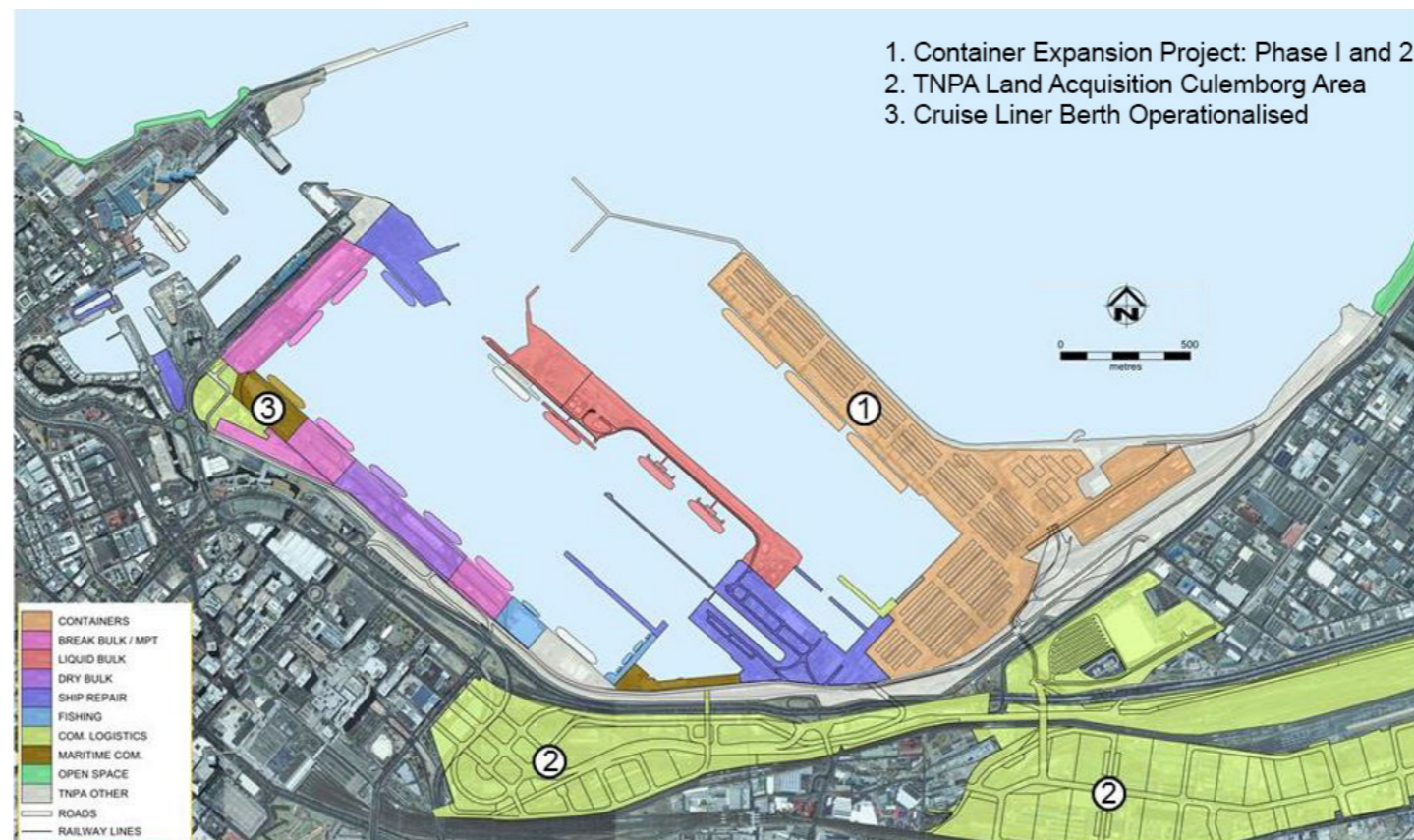
Transnet is a key stakeholder in the Foreshore site, because it owns a large portion of the land intended for development. This land is currently being used for bulk shipping, but according to the Transnet Port Development Plan (TPDP) (2016: 255), the demand for this industry is falling. Container shipping, on the other hand, is an industry with growing demand, and as Maps 3.20 and 3.21 show, Transnet are planning a massive expansion of the container yard to cater to this demand. Part of Foreshore port area is to be used for a cruise liner terminal, and plans made subsequent to the release of the TPDP reserve most of the remaining area for use as cruise liner berths (TCT, 2016). While the TPDP shows intentions of expanding port activities to the Culemborg site east of the Foreshore, this has not been finalised.

Therefore, Transnet's plans to expand industrial port activities to the north-east basins and reserve the Foreshore port area for cruise ships bodes well for the developability of the Foreshore site. This would be much more suited to mixed-use residential developments than industrial port activities would.

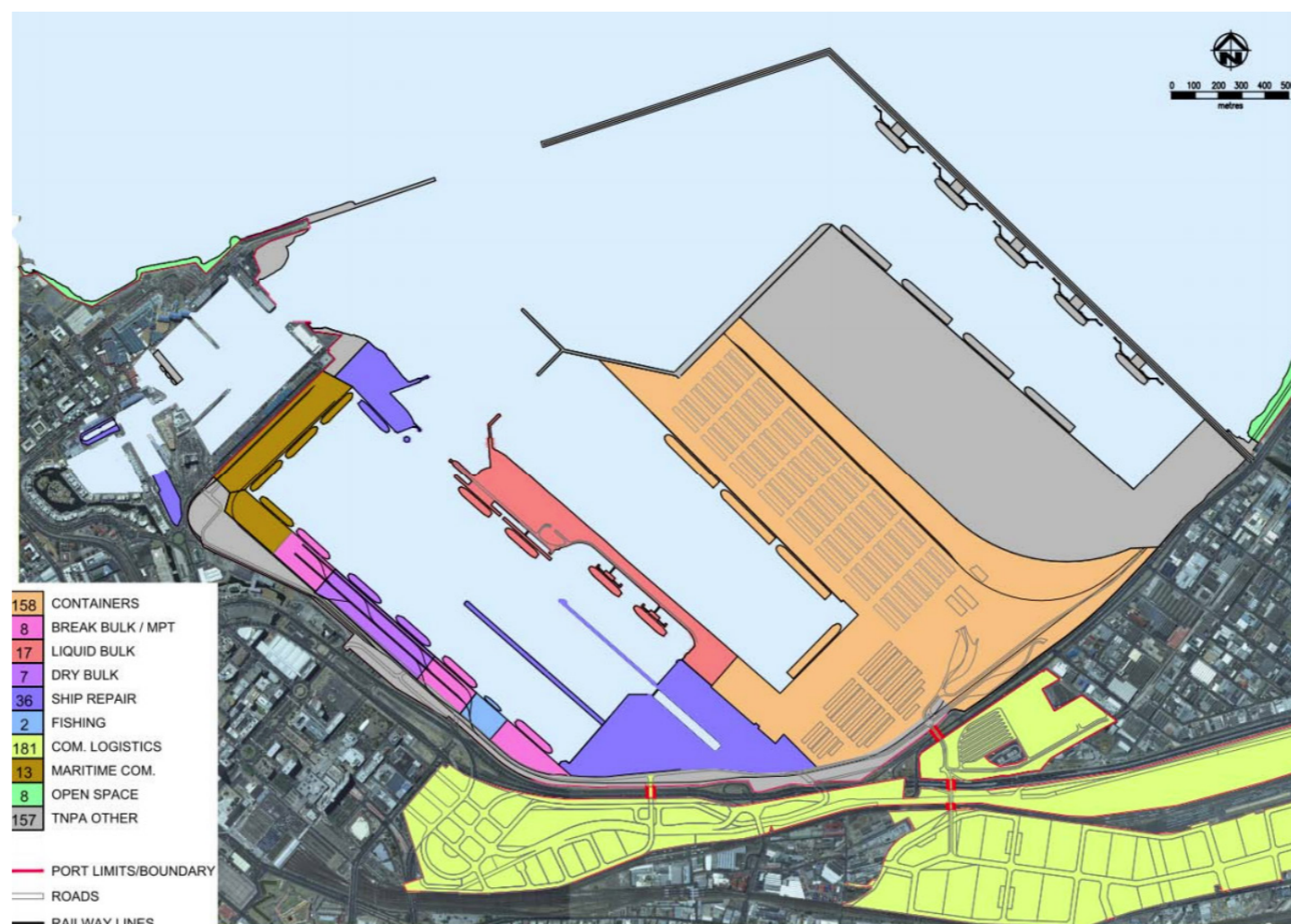
3.2.4 Conclusion

The "suburban flight" that is causing businesses to relocate from the CBD to more suburban areas, together with the growing demand for residential units within the CBD, reflect a desire for more mixed-use spaces that combine work and living spaces. This is understandable, given the spatial disconnect between people and jobs in Cape Town, and the high levels of traffic congestion into/out of the CBD that this disconnect causes. There is therefore a need for more residential space within the CBD.

The City Bowl area is physically constrained by the mountain and the sea, and is also largely developed already. This short supply of developable land escalates the costs of developing in the area, and



Map 3.20: Current layout and short term plans for Cape Town port (Transnet, 2016: 257)



Map 3.21: Cape Town port long-term plan, 2016-2045 (Transnet, 2016: 259).

1. Container Expansion Project: Phase I and 2
2. TNPA Land Acquisition Culemborg Area
3. Cruise Liner Berth Operationalised

increases the cost of existing real estate because the demand outweighs the supply. The overall amount of available real estate in the City Bowl is limited, but the amount of residential real estate in the City Bowl is even more constrained. The competition for this limited supply of residential units in the area pushes their prices up. This results in an urban land market that excludes lower income groups from living in the City Bowl. Lower income groups are thus pushed to the urban periphery. Here they must endure long commutes to and from work, marked by heavy traffic and inefficient, unreliable public transport systems.

Still, despite the City Bowl being desirable for residential development in terms of its proximity to employment and facilities, the CBD's current state is largely unsuited to residential occupation. The historical planning of the City Bowl has created a design that is oriented towards commerce and cars. The dominance of commercial activity means that most buildings are deserted after working hours, and the elevated Foreshore freeways create sterile spaces around them. Further, the industrial development of the Foreshore severs the city's historical connection to the sea, thus undermining the City Bowl's sense of place and reducing public space in the city. This creates an unsafe public environment, which is unappealing to walk through let alone to live in.

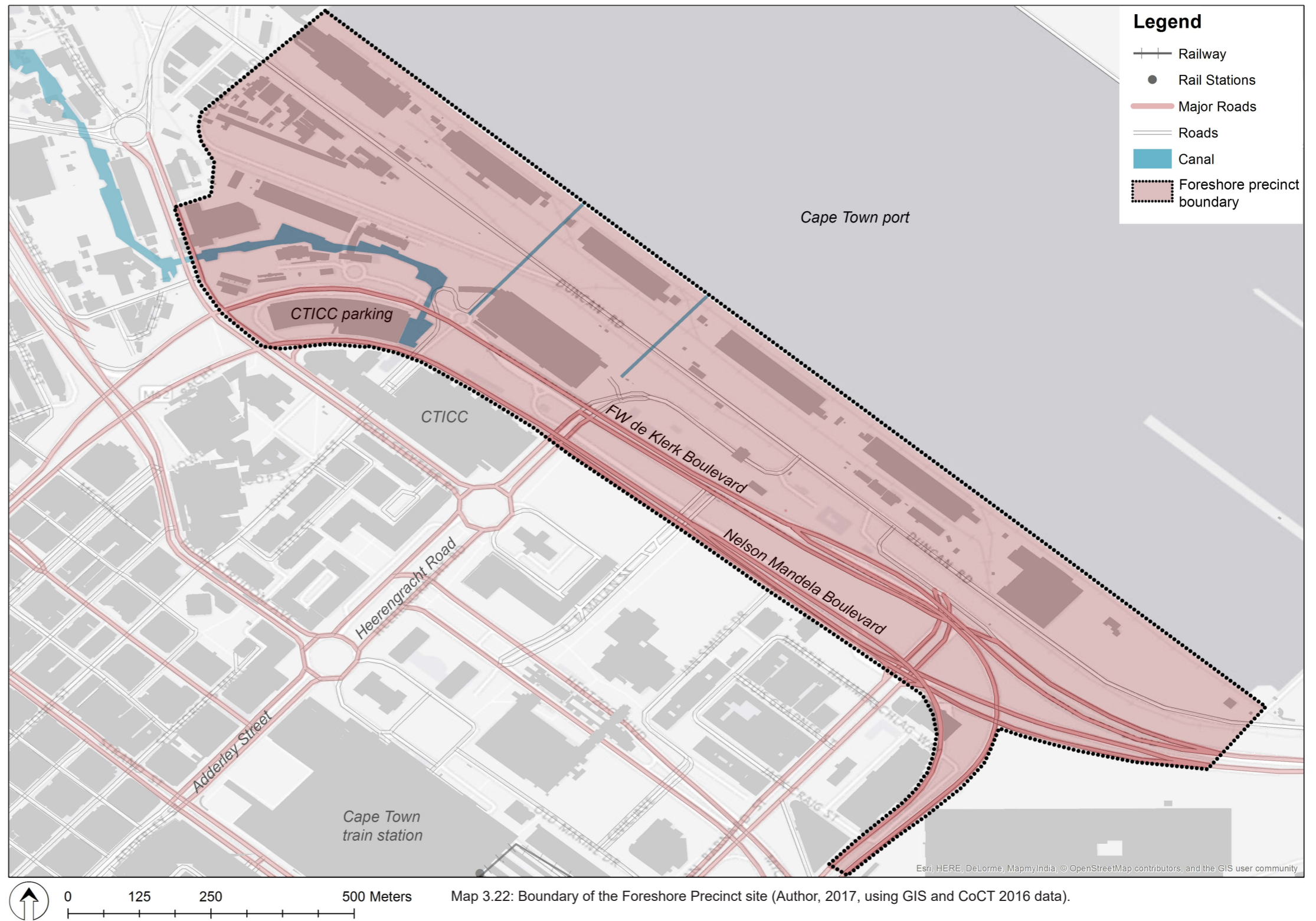
The current plans for the City Bowl do show some intention of addressing these issues and encouraging residential/mixed-use development of the area. The Table Bay District Plan (2012) identifies the Foreshore as a site for mixed-use development, and the City's call for development proposals for the Foreshore suggests that they are committed to realising this plan. Further, the fact that the Foreshore port land may be de-industrialised makes the site even more appealing for mixed use and residential development. However, the current plans for the City Bowl in general and the Foreshore in particular do not sufficiently address the exclusionary land markets in the area. Where 'inclusionary' and 'affordable' housing are mentioned, they are not properly defined, and are therefore likely to be misconstrued during the development process. Therefore, although the City has expressed a desire for more mixed use and residential development in the Foreshore, the outcome of these plans are uncertain. There is no clear commitment to making residential developments in the area affordable to lower income groups.

The following section will analyse the Foreshore site in more detail to argue that it is in fact well-suited to the affordable housing and mixed-use development that the City Bowl needs.

3.3 Site Analysis: The Foreshore

The previous section established the need for more affordable housing and mixed use development in the City Bowl, and identified the Foreshore as a potential site for this. This section will now analyse the Foreshore in terms of its environmental systems, movement routes, and spatial economy to determine the strengths and weaknesses of the site for development.

The boundaries of the site, as shown in Map 3.22, extend from the sea/port down to Nelson Mandela Boulevard, including the eastern entrance ramps of both Nelson Mandela and FW de Klerk Boulevards. These boundaries are based on those of the Foreshore precinct put up for tender by TCT in 2016. I want to more or less follow the boundaries set by TCT so that my proposed spatial plan for the site can be viewed as an alternative to the proposals put forward for the Foreshore development. However, as this is an academic exercise, I have the freedom to include portions of land that may not be available in reality. This includes the CTICC parking garage and the portion of land from Duncan road up to the sea. I have assumed here that Transnet Port Authority has agreed to sell their Foreshore port land and consolodate port activity in the expanded northern basin. This is feasible, based on their port expansion plans, but it is not confirmed in reality. Nonetheless, this dissertation is concerned with imagining a different reality for the Foreshore, and the port land forms a crucial part of this vision. Likewise, the CTICC parking garage is a substantial piece of land that I think should be adapted as part of the Foreshore development. It is therefore also included in the site boundaries.

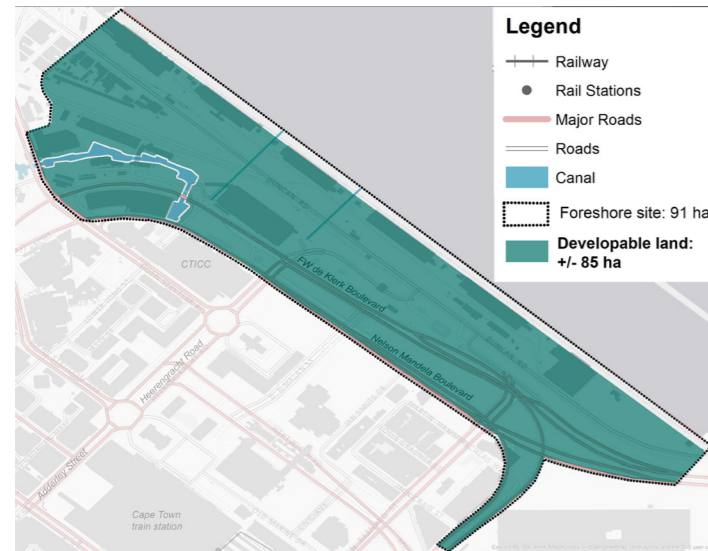


3.3.1 Environmental Systems

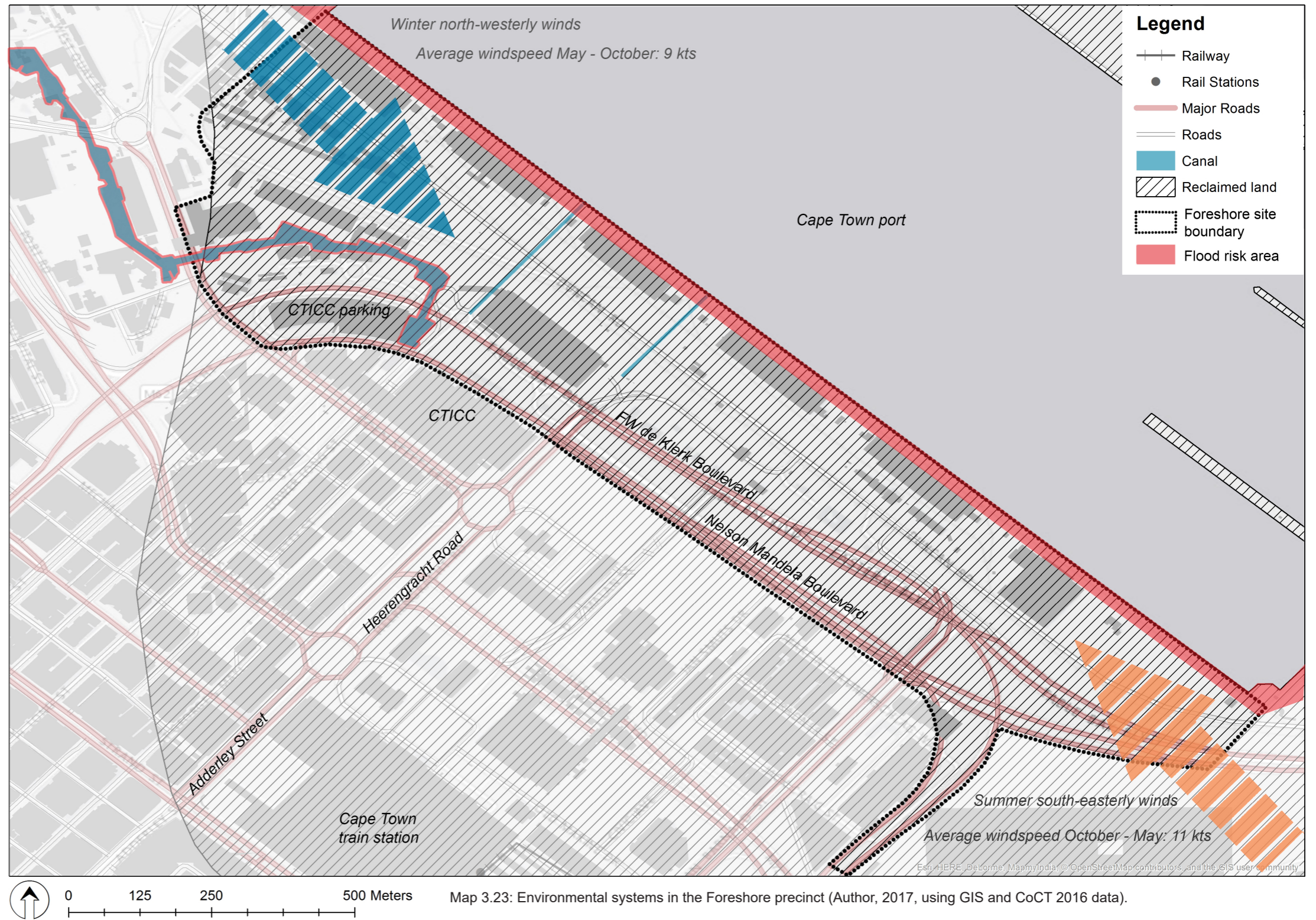
The developability of the site is informed by its proximity to the sea, the winter and summer winds, and the fact that almost all of the site is reclaimed land. That the site is reclaimed, brownfield land means that there are no areas of indigenous vegetation that need to be excluded from the development envelope. However, it also means that development needs to be compatible with the high water table of reclaimed land. As Map 3.23 shows, the strip of land that interfaces with the harbour - as well as the land alongside the canal - is at risk of flooding during episodic events and sea level rise. The strong winds coming in from the south-east in summer and the north-west in winter should inform the design of buildings and open space in the development of the site.

Developable land

The Foreshore site in total is about 91 ha. Taking into account that the canal and flood risk areas are not developable, there is approximately 85 ha of remaining land that is developable, as shown in Map 3.24. This is still a considerable amount.



Map 3.24: Developable land in the Foreshore site (Author, 2017, using GIS and CoCT 2016 data)



Map 3.23: Environmental systems in the Foreshore precinct (Author, 2017, using GIS and CoCT 2016 data).

3.3.2 Movement Routes

The Foreshore site is largely structured by movement routes. These act as both access routes into and barriers between the site and its surrounds. This section will analyse the structure of the movement routes in and around the site, and the trends in their use.

Hierarchy of roads

As Map 3.25 shows, the Foreshore site is bounded by two sets of freeways - FW de Klerk Boulevard and Nelson Mandela Boulevard. These freeways are in the top three busiest roads for both inbound and outbound traffic to the CBD during weekdays, especially for motorised vehicles (see Tables 3.6 and 3.7, and Map 3.25). The freeways are elevated, and they carry high volumes of fast-moving traffic. This makes them structural barriers that discourage pedestrian movement into the site from the CBD (see Figures 3.15, 3.16 and 3.17). There are some lower-level (i.e. slower-moving) roads leading into the site, such as Heerengracht road. However, these pass below the freeways, and the dead space and noise of these underpasses makes the space hostile to pedestrians. Further, Duncan road is largely reserved for industrial vehicles and port activity, and is not publically accessible. Thus, movement routes largely act as barriers that bypass the site and cut it off from the CBD. Further, those routes that do enter the site are mainly for motorised transport rather than pedestrians.

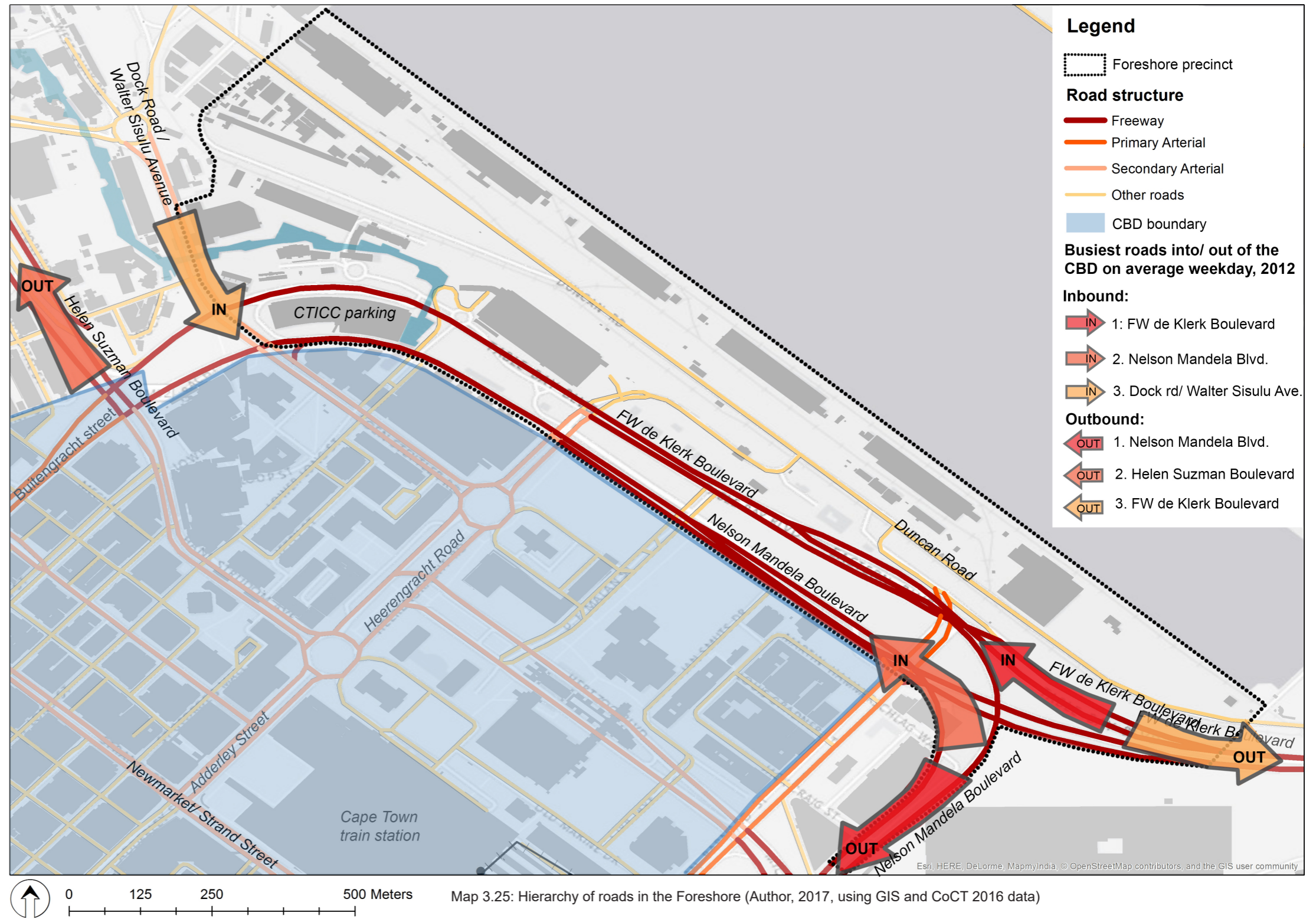


Table 3.6 (below): CBD inbound traffic during a typical weekday, Monday - Thursday, 2012 (TCT, 2016)

Table 3.7 (right): CBD outbound traffic during typical weekday, Monday - Thursday, 2012 (TCT, 2016)

Road	Motorised vehicles			NMT		Grand total
	Buses	Minibus taxis	Private vehicles	Cyclists	Pedestrians	
FW de Klerk Boulevard	185	465	47 761	12	2	48 425
Nelson Mandela Boulevard	165	1 570	29 379	1	7	31 122
Walter Sisulu Avenue	69	197	12 762	16	5 355	18 399
Helen Suzman Boulevard	57	636	15 251	149	31	16 124
Duncan Road	6	2	7 282	16	382	7688

Road	Motorised vehicles			NMT		Grand total
	Buses	Minibus taxis	Private vehicles	Cyclists	Pedestrians	
FW de Klerk Boulevard	3	199	19 032	16	9	19 259
Nelson Mandela Boulevard	165	1 790	25 086	4	38	27 083
Walter Sisulu Avenue	75	125	8 824	42	4 409	13 475
Helen Suzman Boulevard	38	826	20 731	9	24	21 628
Duncan Road	-	6	7 040	24	572	7642



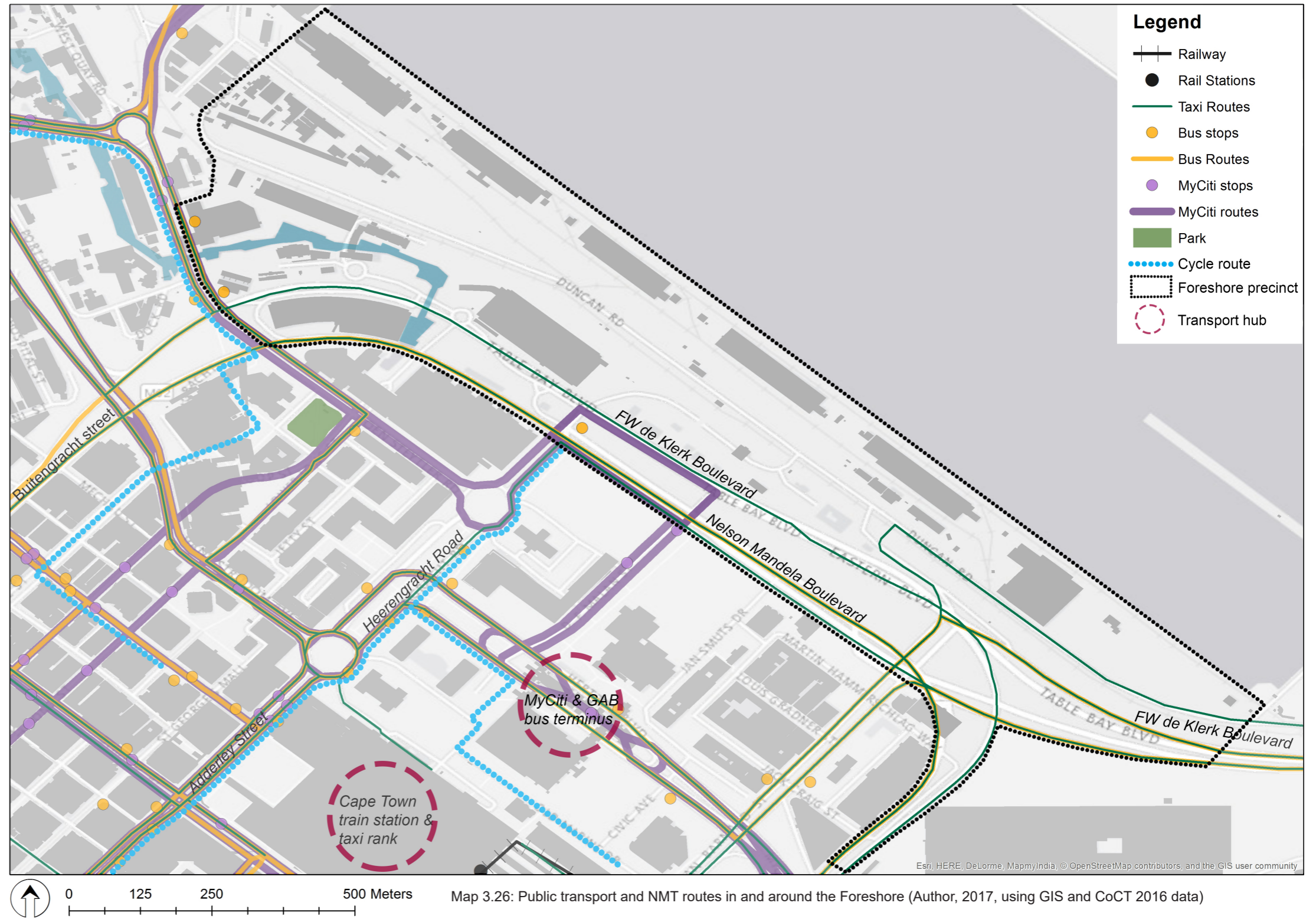
Figure 3.15: Elevated freeways Nelson Mandela and FW de Klerk Boulevards, from ground level FW de Klerk Boulevard (Author, 2017)



Figure 3.16: View down ground level FW de Klerk Boulevard (Author, 2017)



Figure 3.17: Cars parked under Nelson Mandela Boulevard (Author, 2017)



Modes of movement

The Foreshore's movement routes are oriented towards private, motorised transport. As Map 3.26 shows, there are limited public transport routes through the site. Bus and minibus taxi routes run along the freeways, thus bypassing the Foreshore site entirely. There is one taxi route along part of Duncan road, and the MyCiti bus operates along a small loop from Heerengracht to DF Malan street. This route connects with the Civic Centre, the Atlantic Seaboard, and Gardens. Apart from these

routes, there is not public transport access to the site. However, major MyCiti and train stations are located within walking distance of the site. So, although there is limited public transport into the site, there are services available nearby. This makes the site well-located for public transport users.

In terms of NMT, the Foreshore is lacking. As mentioned previously, the domination of fast-moving

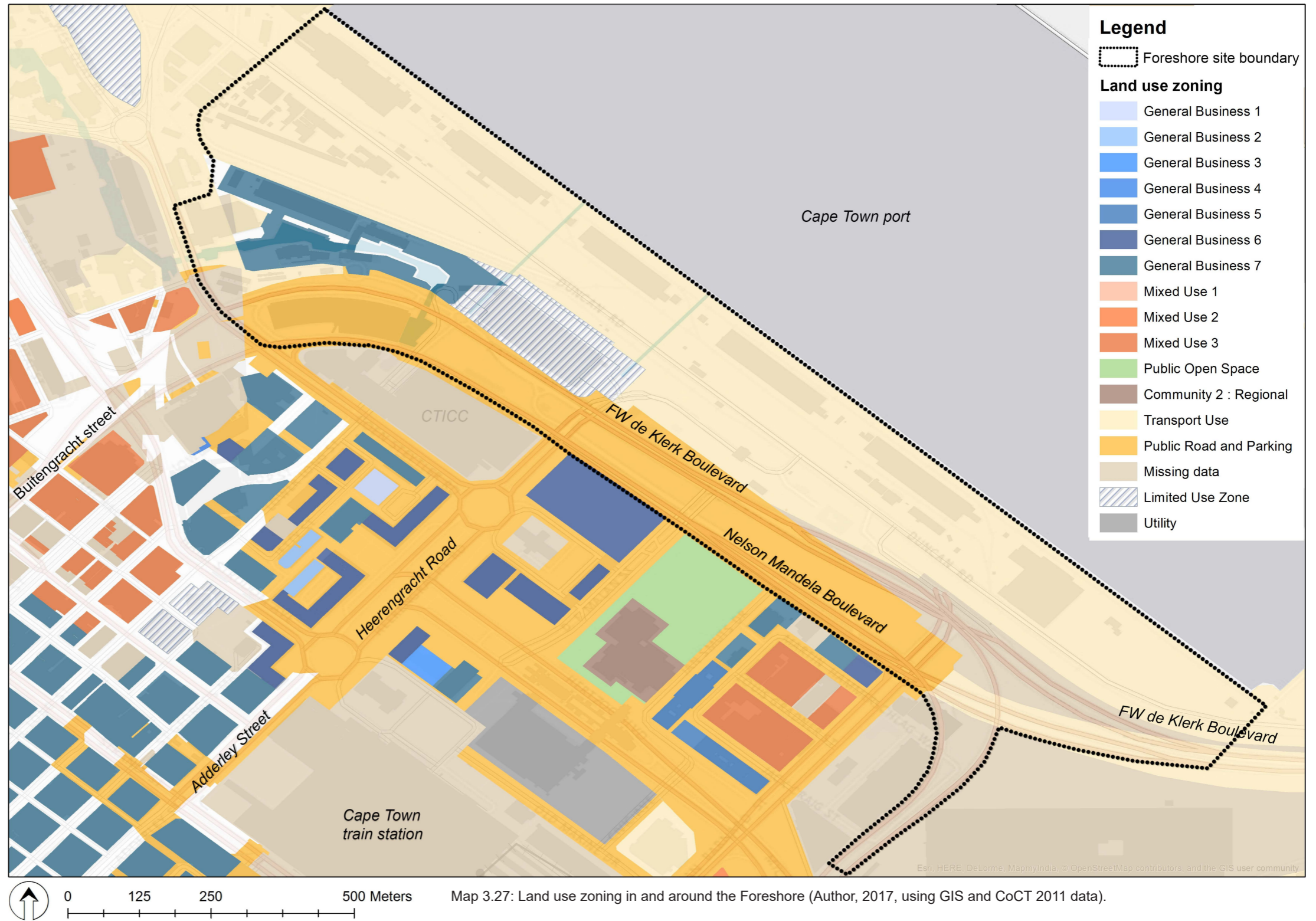
cars makes it largely inaccessible or unappealing to pedestrians, and there are no designated cycle routes through the site (see Map 3.26). However, it would be relatively easy to introduce NMT routes into the site due to the existing road infrastructure.

3.2.3 Current Use of the Site

The current land use zoning, space economy, and public/recreational facilities of the Foreshore are important structuring elements that will inform the development of the site.

Land use zoning

As Map 3.27 shows, the Foreshore is mainly zoned for transport, roads and parking, with small sections of General Business 7 and Limited Use zones. This is in contrast to the surrounding areas that are mostly General Business or Mixed Use zones. The Transport zones do not have the necessary services for residential or commercial use, and adding these services would be expensive (TCT, 2016). Developing the Foreshore for affordable housing and a mix of uses would therefore require significant rezoning and the addition of reticulated services such as water, electricity, and sewerage. The City would need to find creative ways to fund the provision of this infrastructure in order to make the development feasible.



Space economy: Commercial and industrial space, and current developments

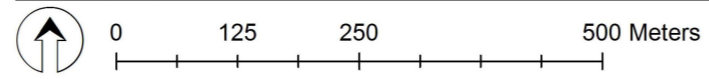
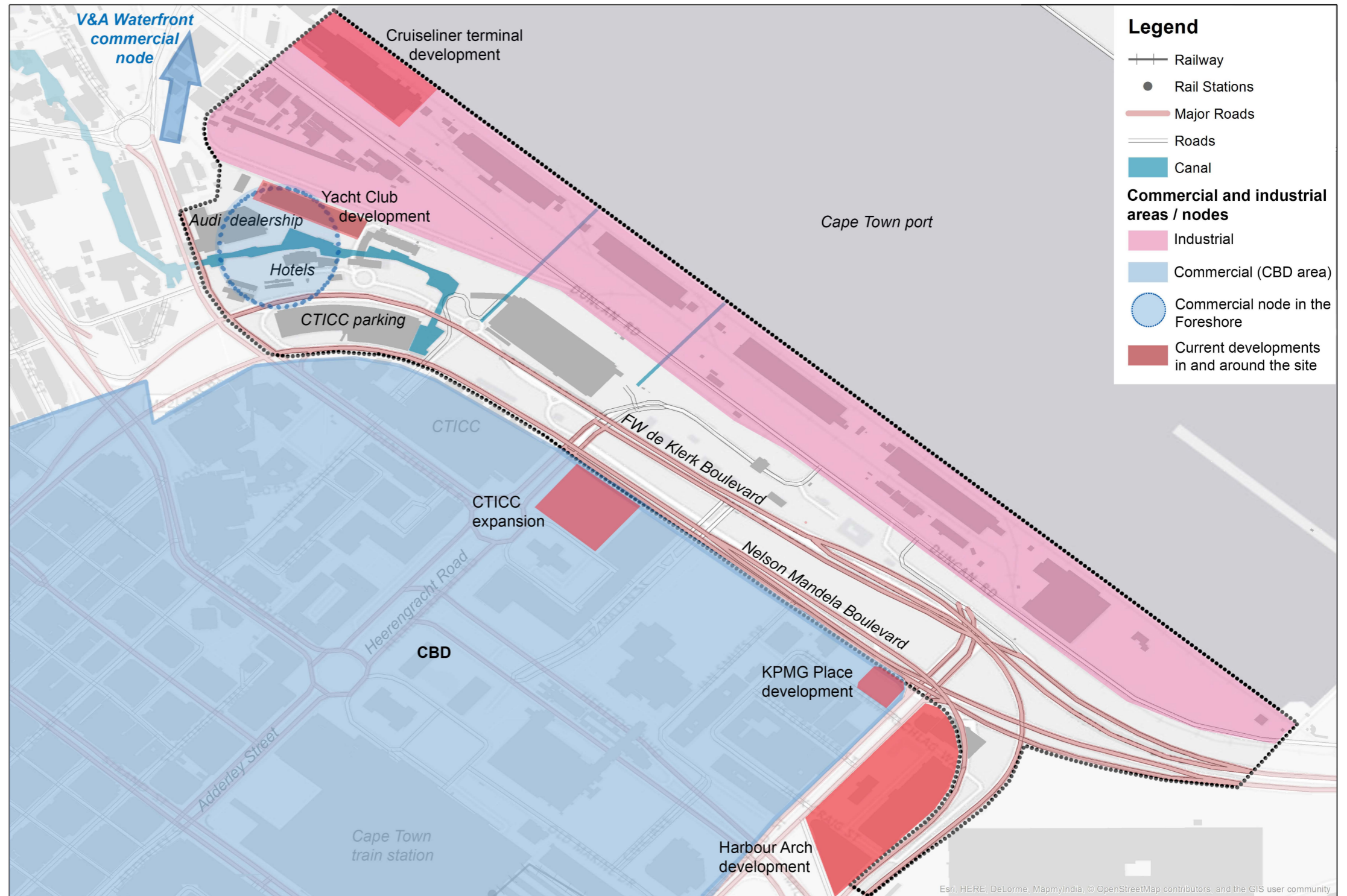
Approximately half of the Foreshore site is currently used for port activities (industrial use). Much of the remaining half is roads, road reserves, parking lots, and vacant land (see Map 3.28). This means that there are limited employment opportunities within the site other than jobs in the port. Alongside the canal, however, there is a small node of commercial activity. This includes an Audi dealership, and the Canal Quays and Harbour Bridge hotels. Further, there are major commercial activity nodes surrounding the Foreshore, such as the CBD and the V&A Waterfront. Therefore, although there are limited employment opportunities within the site, there are many in the surrounding nodes, and these could be extended into the site if it were developed.

There are five major developments that are currently underway or will soon be implemented in and around the Foreshore site (see Map 3.28). The first is a cruise liner terminal in the north-west corner of the port that is to be developed by the V&A Waterfront Company to the value of approximately R179 million (cbn.co.za). Construction of the first phase of this passenger terminal was completed in 2016, with additional upgrades set to take place during 2017 (Waterfront.co.za). This development will significantly alter the industrial character of the Foreshore by bringing in large numbers of people. The terminal received 86 400 passengers in 2016, which bodes well for tourism in the city as a whole (Ibid.).

The second development is a luxury 'mixed-use' complex on the northern bank of the canal, referred to as the Yacht Club and developed by Amdec Group. This will consist of commercial space and 170 luxury one- and two-bedroom apartments whose starting price is R2.4 million (Futurecapetown.co.za). The project is set to be completed in 2017.

Amdec is also developing another 'mixed-use' precinct, referred to as Harbour Arch, in a plot adjacent to the south-east end of the Foreshore site. This will consist of two hotels, commercial space, and luxury apartments with a starting price of R1.9 million (businesstech.co.za).

Two other developments are occurring adjacent to the Foreshore precinct: the expansion of the CTICC into the plot directly opposite the existing building, and 'KPMG Place' - the new headquarters for the accounting firm KPMG. The CTICC expansion aims provide more space to host international conventions, and KPMG Place will be a 25 storey



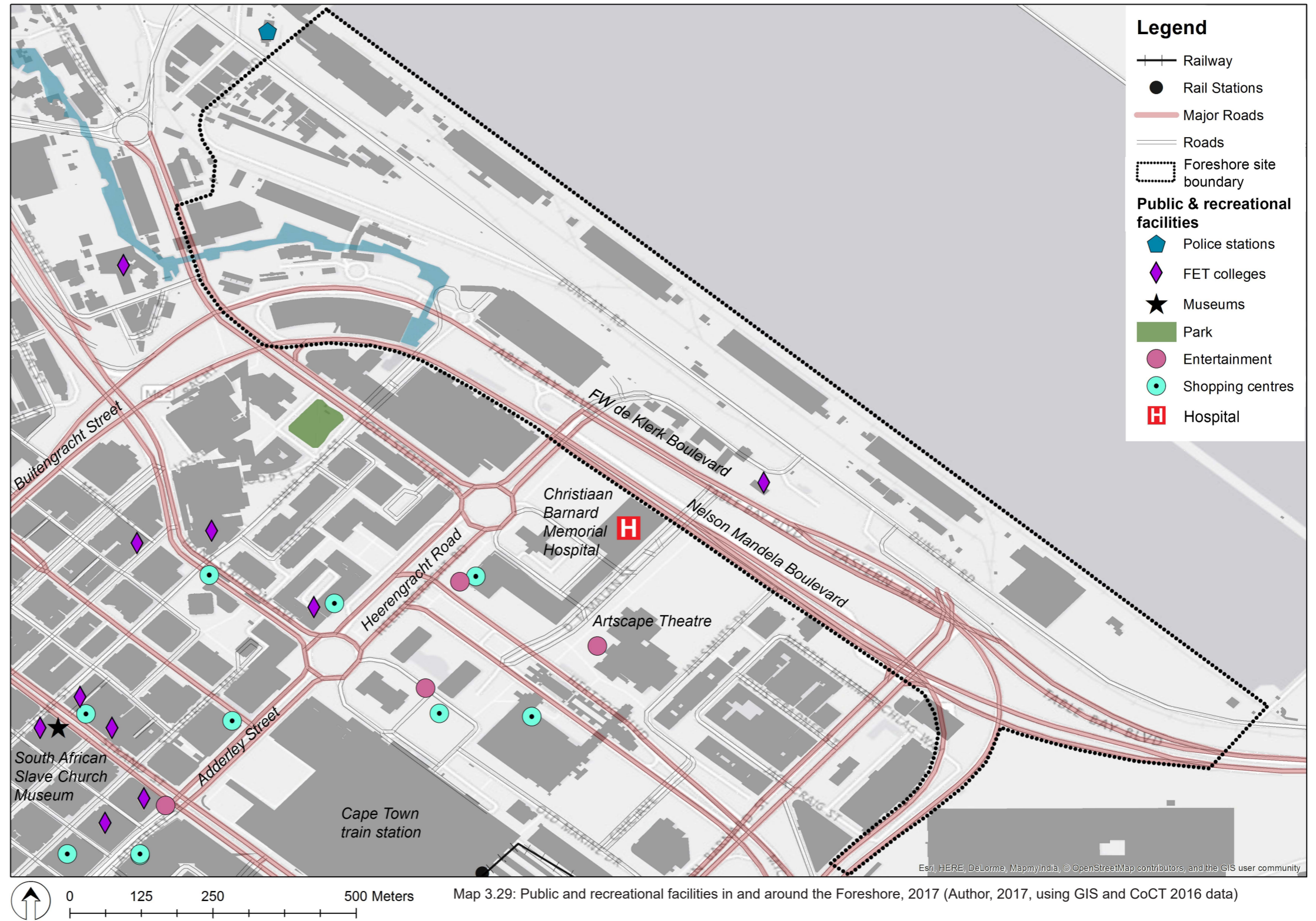
office block (Czernowalow, 2016; urbancape town.co.za, 2017).

Map 3.28: Commercial and industrial areas, and current developments in and around the Foreshore (Author, 2017, using GIS and CoCT 2016 data)

All of these developments are targeted at a high income group, which could result in the space and its surroundings becoming exclusionary to lower income groups. Therefore, development in the rest of the Foreshore should take measures to prevent this exclusionary tendency and to ensure that the space remains accessible to all.

Public and recreational facilities

The Foreshore precinct itself only contains one public facility (a marine training centre). However, Map 3.29 shows, the surrounding area contains many FET colleges, entertainment facilities, shopping centres, a museum, and the new Christiaan Barnard Memorial hospital. Therefore, increasing the residential component of the Foreshore would only require the development of a few new public facilities. These would mainly be facilities that are lacking in the immediate surrounds, such as schools and sports facilities.



3.3.4 Synthesis of Opportunities and Constraints

This analysis of the Foreshore site has highlighted structural elements of the site's environment, movement routes, and current use that will inform how it can be developed. These elements can be synthesised into opportunities and constraints, as represented in Table 3.8 and Maps 3.30 and 3.31.

Site Analysis Conclusion

The main constraints to the Foreshore's development are the congested freeways that act as barriers into the site, and the environmental conditions of wind and flood risk. However, these constraints can be seen as opportunities in that they could be solved by a thoughtful redevelopment of the Foreshore. Further, the site has the potential to reconnect the city's historic link to the sea, and the large area of developable land provides the opportunity for developing large quantities of affordable housing. This housing would be well-located because of the proximity to transport nodes, employment opportunities, and social facilities.

These opportunities and constraints will inform the objectives and spatial principles explored in the following chapter, as well as the proposals put forward in the concept plan in chapter 5.

Structuring elements	Opportunities	Constraints
<i>Environmental systems</i>	<ul style="list-style-type: none"> Potential to restore the physical and visual connection between the city and the sea Most of the site (85 of 91 ha) environmentally suitable for development 	<ul style="list-style-type: none"> Risk of flooding along water's edge and canal Strong winds year round Reclaimed land requires sensitive development due to higher water table
<i>Movement routes</i>	<ul style="list-style-type: none"> Proximity to public transport routes (buses, MyCiti, taxis, train station) provides opportunity to extend public transport network into the site Potential to better connect site to the surrounding road structure, thus increasing its accessibility Potential to increase NMT use Potential to reduce private car use and congestion 	<ul style="list-style-type: none"> Freeways act as barriers between site and its surrounds Traffic congestion on the freeways High levels of private car use into and around the site Car-oriented space Hostile environment for pedestrians Limited public transport routes No designated cycle routes
<i>Current use</i>	<ul style="list-style-type: none"> Potential to add significant quantities of affordable housing in the site, thus enabling socio-economically equitable development Existing mixed use zoning in areas surrounding the site provide the opportunity to integrate the site into its surrounds by rezoning it to mixed use Proximity to the CBD and V&A Waterfront commercial hubs and the employment opportunities of these areas Proximity to a cluster of public/recreational facilities in the CBD 	<ul style="list-style-type: none"> Site's current zoning does not allow for housing/mixed use development Limited employment opportunities within site Lack of facilities and services within the site Threat of exclusionary developments

Table 3.8: Foreshore site opportunities and constraints (Author, 2017)

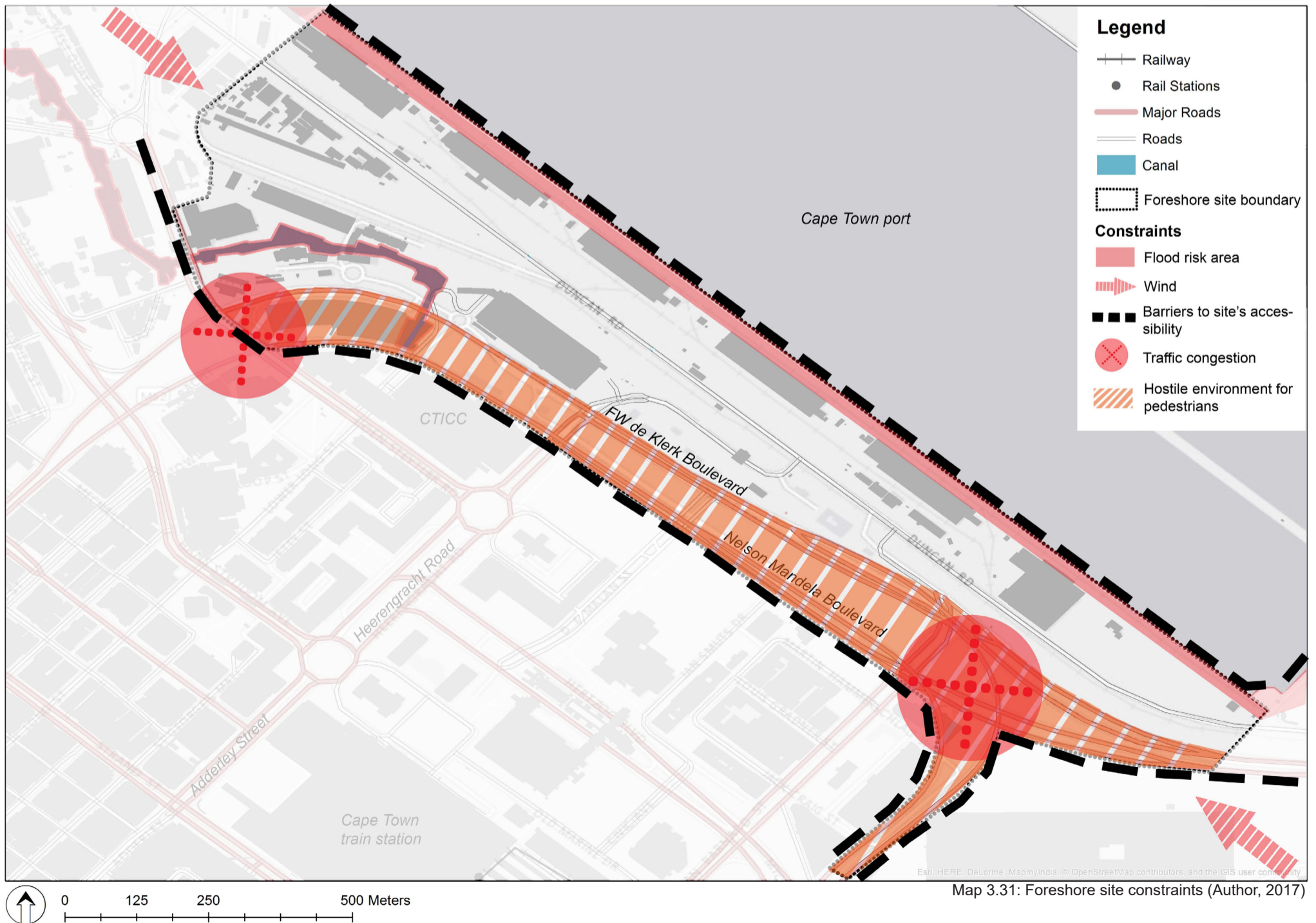
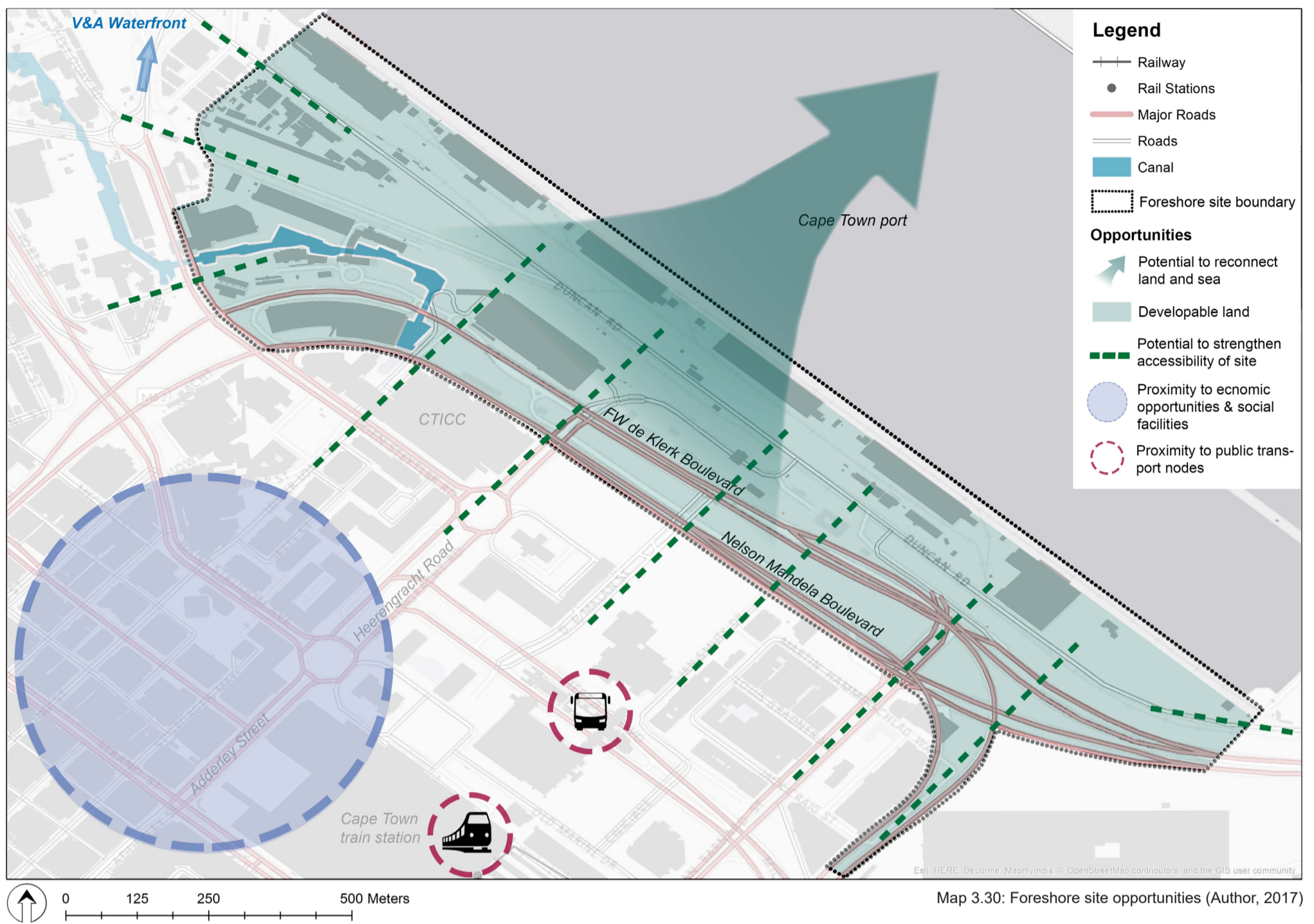
3.4 Conclusion

This contextual analysis has shown that Cape Town needs more affordable housing and mixed-use developments in its employment centres. The City Bowl is one such employment centre. Its expensive and monofunctional space economy is hindering the area's growth and equity. Businesses are relocating to the suburbs in pursuit of mixed-use areas that provide cheap office space close to residential areas. This 'suburban flight' is siphoning investment out of the established CBD. To draw investment back into the CBD, it is therefore imperative that the City Bowl develops more mixed-use and residential spaces to cater to the demand.

Further, if the City is to achieve its mandate of socially just development, these new residential areas must be affordable to low-income households. The segregated development patterns that were initiated by apartheid government are now being perpetuated along class lines. To overcome this spatial segregation, the City must enable the development of well-located, affordable housing. Cape Town will only achieve truly just development when low-income households can afford to live in areas of opportunity such as the City Bowl.

In this context, the Foreshore emerges as a prime site for beginning this socially just development. The site is adjacent to an abundance of public facilities and employment opportunities. Further, the site covers a significant area and is almost entirely developable. This provides the rare opportunity to provide a significant amount of affordable housing in the well-located inner-city of Cape Town.

The following chapter will explore what form this affordable housing should take, and who its market should be.



4. A REVIEW OF AFFORDABLE HOUSING POLICY, MODELS, AND MARKETS

The previous chapter established the need for affordable housing in Cape Town, especially in well-located areas of the City Bowl, and argued that the Foreshore is a prime site for this. This chapter will review the policies and literature pertaining to affordable housing in South Africa to understand what 'affordable housing' means, and who the affordable housing market is in Cape Town and the City Bowl.

Broadly speaking, the 'affordability' of housing has three components: "a financial component (the share of income devoted to housing), a standard for what constitutes minimum socially acceptable housing, ... and at what income level households should be eligible for housing assistance" (Woetzel et al., 2014: 1). The widely accepted financial threshold for affordability is that no more than 30% of household income should go towards housing costs (Ibid.). This means that 'affordability' differs from household to household, depending on their income. In South African affordable housing discourse, there is an additional financial criterion whereby housing units valued at less than R500 000 are deemed 'affordable' (ALHDC, 2010). However, this definition is only useful when referring to sectional title units, and even then it does not specify who exactly the market for these units is. Not everyone can afford a R500 000 house, even if it is declared to be 'affordable'.

South Africa's housing programmes identify the affordable housing market (those eligible for housing assistance) as households earning R15000 per month or less, although different programmes cater to different segments of this bracket. The standard spatial elements of an affordable (government) housing unit in South Africa must conform to the dimensions outlined in the Norms and Standards section of Table 1. International standards also specify that affordable housing must be located within a one hour commute of employment centres. This is important as it ensures that the housing is well-located (Woetzel et al., 2014).

"Affordable housing" is therefore a broad category. It encompasses a wide range of public and private housing models and schemes, each catering to different markets within the overall affordable housing market. These different models are rooted in the variety of national housing policies and laws that have been generated in South Africa since 1994. The first section of this chapter provides a review of these policies in order to better understand the different models and their legal backing. The

housing policies will then be situated within the broader debates around affordable housing. Then, the different affordable housing models will be assessed in terms of their target market, physical dimensions, tenure structure, and financing schemes. The second section will analyse the current housing market in Cape Town and the City Bowl. This will determine who would need affordable housing in this area, and which model would be best suited to this market.

4.1 Affordable Housing in South Africa: A Review of Policy, Legislation, & Discourse

When the new government came to power in 1994, it inherited a housing crisis from the old regime. Millions of black South Africans had been dispossessed of their land/houses during apartheid. The Group Areas Acts forcibly removed many people to the urban periphery, and the Bantustan policy forced many more into rural areas (Newton & Schuermans, 2013). Those who had remained in urban areas were predominantly living in informal settlements. The housing backlog for urban areas in 1994 was estimated at around 1.5 million units, as well as some 720 000 serviced sites in need of housing upgrades (DoH, 1994). Addressing this lack of housing was therefore one of the top priorities for the newly-elected government. So much so that the right to 'adequate housing' is included in the 1994 Constitutional Bill of Rights (Ibid.).

'Adequate housing' here refers to a number of factors, one of which is affordability. Since 1994, the South African government has introduced several Acts and policies that support this right to adequate, affordable housing, an overview of which is provided in Table 4.1. These Acts and policies will be discussed in more detail in the following paragraphs, with a particular focus on formal urban housing policies due to the urban context of my site (the Foreshore). This policy review aims to understand the development of definitions and models for affordable housing in the country since 1994, and to analyse to what extent the legislation provides for affordable inner-city housing.

Housing policy	Housing legislation
<ul style="list-style-type: none"> - White Paper on Housing (1994) This policy established the Reconstruction and Development Programme (RDP), a government subsidised housing programme. It also created the National Housing Subsidy Scheme (NHSS), which provided the subsidies for RDP houses. - Breaking New Ground (BNG) (2004) This policy replaced RDP as South Africa's government subsidised housing programme. - Inclusionary Housing Policy (2007) This policy incentivised private sector to collaborate with government to provide housing for low income groups in well-located areas. - National Housing Code (2000, revised 2009) This details all national housing subsidy programmes, which can be divided into four categories: <ul style="list-style-type: none"> 1) Financial programmes <ul style="list-style-type: none"> - Individual Housing Subsidies - Includes Finance-Linked Individual Subsidy Programme (FLISP) - Enhanced Extended Discount Benefit Scheme (EEDBS) - Social and Economic Facilities - Accreditation of Municipalities - Operational Capital Budget - Housing chapters of IDP - Rectification of Pre-1994 housing stock 2) Incremental Housing programmes <ul style="list-style-type: none"> - Integrated Residential Development Programme (IRDP) - Enhanced People's Housing Processes - Informal Settlements Upgrading Programme - Consolidation Subsidies - Emergency Housing Assistance 3) Social and rental housing programmes <ul style="list-style-type: none"> - Institutional Subsidies - Social Housing Programme (SHP) - Community Residential Units 4) Rural housing programmes <ul style="list-style-type: none"> - Rural Subsidy: Informal Land Rights - Farm Residents Housing Assistance Programme 	<ul style="list-style-type: none"> - Constitution (1994) Chapter 2, Section 26 states that: <ul style="list-style-type: none"> (1) <i>Everyone has the right to have access to adequate housing.</i> (2) <i>The state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of this right</i> (3) <i>No one may be evicted from their home, or have their home demolished, without an order of court made after considering all the relevant circumstances. No legislation may permit arbitrary evictions.</i> - Housing Act (1997) This Act provides for a "sustainable housing development process", allocates responsibilities for housing provision in each sphere of government, and stipulates how housing programmes should be financed (Tissington, 2011: 15). - Prevention of Illegal Eviction from and Unlawful Occupation of Land Act (PIE) (No. 19 of 1998) Protects people who are unlawfully occupying land (public or private) from being arbitrarily evicted from this land. - Rental Housing Act (1999) This Act "regulates the relationship between landlords and tenants in all types of rental housing" (Ibid. p.18) - National Norms & Standards (2007) This regulates the structure of government housing programme units. All stand-alone dwelling units must have: <ul style="list-style-type: none"> - Minimum gross floor area of 40m² - Two bedrooms - Separate bathroom with a shower and hand basin - Combined living area and kitchen with basin - Electricity board installed - Social Housing Act (2008) This Act provides for the Social Housing Programme (SHP) that is run by a Social Housing Institution (SHI), which in turn is governed by the Social Housing Regulatory Authority (SHRA).

Table 4.1: South African housing legislation and policies at a glance, 1994 - 2011 (Author, 2017, adapted from Tissington, 2011)

The White Paper on Housing (1994)

The 1994 White Paper on Housing transferred the constitutional right to housing into a policy framework. Its aim was to address South Africa's housing crisis - that is, the vast numbers of low-income groups who were without 'adequate' housing. This policy established the Reconstruction and Development Programme (RDP), which would deliver government-subsidised housing to low income groups. It also established the National Housing Subsidy Scheme (NHSS) to finance these subsidies (Tissington, 2011). The Paper set out a clear and ambitious goal for the RDP: to construct "one million state-funded houses in the first five years of office" (Ibid. p.24). This goal is quantitative, as it is concerned with the number of housing units to be delivered, rather than the quality of these units, or how they will be co-ordinated into settlements.

Although the quality of the housing units is not included in the policy's goal, it is broadly stated elsewhere in the Paper. The housing units were to consist of stand-alone structures on serviced sites, located reasonably close to amenities and job opportunities. The dwelling units were intended as "starter house[s] (sometimes consisting of building materials, where the subsidy only covered land and servicing costs)" (Tissington, 2011: 61). The beneficiaries could then alter and add to these over time as their needs and means changed.

Underlying the policy of housing delivery was the aim of land restitution. Most free and subsidised government housing came with the promise of secure tenureship for beneficiaries (Khan & Thurman, 2001). The housing target market was the lowest income groups. Households earning less than R1500 per month would receive a free house in a national housing project, and households earning between R1500 - R3500 qualified for various housing subsidy options to help them buy a house in one of these projects (DoH, 1994). The Paper also specified certain criteria for eligibility beyond income. Namely, that beneficiaries must be South African citizens, and must be married or have financial dependants (DoH, 1994).

The focus of the 1994 Housing Paper was therefore targeted at very low-income family households, with the aim of providing 'adequate housing' units and secure tenure. The RDP policy has been critiqued for prioritising quantity over quality of houses, and for locating the housing projects on the urban periphery where land is cheap. It is argued that this perpetuates the very apartheid spatial inequality that RDP sought to undo (Musvoto & Mooya, 2016). After ten years of operation, in which approximately

1.6 million RDP units were constructed, the RDP was replaced with the Breaking New Ground (BNG) policy. This will be discussed later (DHS, 2004).

The Housing Act (1997)

The 1997 Housing Act was the legislative arm that gave force to the White Paper on Housing. Its definition of 'housing' is therefore based on that of the White Paper, which includes the components of basic services, secure tenure, and access to socio-economic amenities. The Act assigns different roles and responsibilities regarding housing delivery to each sphere of government. National government is responsible for generating the enabling legislation and funding for housing projects. Provincial government essentially acts as a bank and middleman. It transfers national grants to local government and signs off on municipal housing projects. Local government, therefore, is tasked with translating the national policies into implementable housing projects. These are funded by the national grants passed down to them from Province. Subsequent amendments to the 1997 Act have strengthened this role of local government as "developers of low-income housing" (Tissington, 2011: 15).

This Act also stipulates that beneficiaries of government houses may not resell their units until they have owned them for eight years. However, this period was later reduced under BNG policy because it was hindering the beneficiaries' potential for upward social mobility (Tissington, 2011). Now, beneficiaries only have to occupy their houses for five years before they can sell them on.

Prevention of Illegal Eviction from and Unlawful Occupation of Land Act (PIE) (No. 19 of 1998)

This Act protects people who are illegally occupying land (be it state- or private-owned) from being unfairly evicted. Under this Act, a fair eviction is one in which a court reviews the case and finds it to be "just and equitable" (Tissington, 2011). This must be based on the socio-economic positions of both the occupiers and the landowner. Evictions are therefore unlikely to be granted if the occupier does not have the means to find alternative accommodation (Tissington, 2011).

The Rental Housing Act (1999)

This Act pertains to landlords and tenants of rental housing, as well as government's role in regulating this relationship. The Act states that the government is responsible for ensuring that the rental market

does not exclude low income groups by incentivising private sector to provide affordable rentals (Tissington, 2011). However, this Act has had limited effect on the supply of affordable rental housing (SERI, 2016). Critiques of the different public rental policies and programmes will be discussed in the sections on Inclusionary Housing, Social Housing, and Community Residential Units below.

Breaking New Ground (BNG) (2004)

This updated housing policy aimed to address some of the shortcomings of its predecessor, RDP, and to establish a more nuanced understanding of housing models and markets. Where RDP had focused on quantity, BNG aimed to focus on the quality and design of its housing, and to provide more choice in terms of tenure and location (Tissington, 2011). The policy also acknowledged that RDP units "had not in fact become the valuable assets envisioned in earlier policy" (Tissington, 2011:66). It therefore shifted the objective to providing housing "as a catalyst for achieving a set of broad socio-economic goals" that extended beyond the value of the units themselves (Ibid.). Another important change was that the subsidy programmes were extended to include people earning up to R7000pm rather than the original R3500pm cut off, thus widening the qualifying category. These changes reflect a shift towards a more demand-driven approach to housing delivery. The policy prioritises the varied needs of the beneficiaries by catering to a wider range of income groups and offering more tenure and location options.

However, the policy shift represented in BNG has not manifested in significant changes to the types of housing projects government is implementing, and the policy has been critiqued for this. In short, BNG housing projects echo RDP projects in that they still take the form of low density, greenfield development on the outskirts of urban centres (Musvoto & Mooya, 2016) (Rust et al, 2009).

National Norms & Standards (2007)

This legislation regulates the size and structure of government housing units. All units should be stand-alone and must have:

- Minimum gross floor area of 40m²
- Two bedrooms
- Separate bathroom with a shower and hand basin
- Combined living area and kitchen with basin

- Electricity board installed (if electricity is available in the project area)

These standards thus specify a low-density model of housing that is much more compatible with greenfield development rather than with urban regeneration, which would require high densities and could not support large numbers of stand-alone units.

Inclusionary Housing Policy (2007)

This policy implicates private sector developers in the process of affordable housing provision. These developers are required to contribute the equivalent of 20% of their project value towards affordable housing, with the idea that these units will be built within the same project as the original development. This would enable affordable housing to be located in the well-located areas that are usually dominated by market housing.

This policy provides "symbolic support" for the idea of public-private partnerships in affordable housing provision, but does not offer concrete guidelines for how this process should be tackled (Hogarth, 2015). There is also no supporting national legislature to enforce this policy, and so the onus is on municipalities to take the initiative to negotiate partnerships with the private sector (Tissington, 2011). This lack of legal backing and vague policy terms has hindered the implementation of inclusionary housing (Ibid.).

Social Housing Act (2008) and Social Housing Programme

This Act established 'social housing' as another form of affordable housing. This housing consists of rental units that, as of 2017, cater to people earning R1500-R15000 pm (the previous bracket being R3500 – R7500 pm). Social housing projects must also be situated in Restructuring Development Zones, which are usually well-located areas within one hour's commute from employment centres (Tissington, 2011). Individual social housing projects are run by a Social Housing Institution (SHI), and all SHIs are regulated by a Social Housing Regulatory Authority (SHRA). Social housing has two main aims:

1. Provide well-located housing for people who do not qualify for free basic housing but who also cannot access bank loans (i.e. the gap market – see Table 3);
2. Ensure that this housing remains permanently accessible to this market by providing rentals instead of sectional titles, and by monitoring tenant income.

The recent expansion of the market to include households earning R1500-R3500 somewhat undermines the first aim. This group qualifies for BNG housing and therefore falls outside the gap market. Further, there is already limited demand for social housing in the lower end of the income band (McCarthy interview, 2017). Including very low income groups in the qualifying band also puts strain on the financial model of social housing, which relies on households from the higher end of the income bracket to cross-subsidise the lower end (although all households still receive subsidised rent). When the income bracket is extended down, this constrains the ability of the higher income tenants to cross-subsidise the rent of all lower end units. This is an issue because 30% of all units in social housing projects must cater to the lowest income band, even if there is more demand for the higher income units (McCarthy interview, 2017). Therefore, social housing would be more financially viable if it catered to a limited income band that was based on the actual market demand.

The second aim of social housing – to always be available to the designated low-income band - is the reason it provides rental rather than sectional title units. Unlike sectional title units, social housing units are kept safe from the inflated prices of open market, as they remain under the control of the state through the SHRA's regulation of the SHIs. This ensures that the units remain affordable to low-income groups. SHIs monitor tenants' incomes, and once tenants start earning above R15000 pm they are required to move into market housing. This enables households earning less than R15000 pm to take their place in the programme (Tissington, 2011). This process has been criticised for making tenants vulnerable to unfair eviction (SERI, 2016), but it is crucial to social housing's aim of ensuring that the units remain permanently accessible to low-income households.

Social housing usually takes the form of three- to four-storey walk-ups, but there are examples of successful high-rise social housing projects in South Africa (see Chapter 7.3.4). This urban form, together with the requirement of good location, makes social housing well suited for inner-city developments.

National Housing Code (2000, revised 2009)

This sets out the different government housing subsidy programmes, as well as the general qualifying criteria that candidates must fulfil to become beneficiaries of these programmes. In order to become a beneficiary from any housing subsidy programme, applicants must:

- Have South African citizenship or a Permanent Residence Permit
- Be legally competent to sign contract (i.e. over 18 years and of sound mind)
- Have not yet benefited from government funding
- Be a first time property owner (this does not apply to disabled persons, people who lost land due to apartheid laws, and people who acquired land through the Land Restitution Programme)
- Be married or have financial dependants (i.e. must be more than one person dependant on household income). This does not apply to disabled persons, senior citizens, or military veterans.
- Have a household income within the bracket of the programme they are applying to (Tissington: 2011).

The full list of housing programmes in the Code is shown in Table 4.1, but not all of them relate to this dissertation's focus on *urban* affordable housing. The programmes that are most relevant in this regard are the Social Housing Programme, the Finance-Linked Individual Housing Subsidy Programme (FLISP), and Community Residential Units. The Social Housing Programme has already been discussed under the previous section on the Social Housing Act, and so only the other two programmes will be discussed below.

i) Finance-Linked Individual Housing Subsidy Programme (FLISP)

This is a subsidy scheme aimed at providing financial assistance to low-income groups who are buying property. The rationale is to “reduce the initial mortgage loan amount to render the monthly loan repayment instalments affordable over the loan payment term” (WC DHS, 2016). To qualify for FLISP, applicants must earn between R3500 and R15 000 (i.e. the ‘gap’ market). Further, they must be in the process of buying a house/ property, and they must be registered with a bank (Ibid.). The subsidy that they receive will be paid to the beneficiary's bank as a down payment on the property, thus reducing the amount needed to be taken out as a mortgage to pay the difference. Table 4.2 shows how FLISP helps to reduce beneficiaries' monthly mortgage payments (the example is for loans taken at 11.25% over a period of 20 years, but this would vary with each bank).

Beneficiaries must therefore pay back the home loan provided by their bank. However, this loan (and its monthly instalments) is significantly reduced through FLISP, thus making it easier for low-income groups to take out mortgages and buy property. Subsidy amounts for FLISP range from R20 000 to R87 000, and are negatively correlated to beneficiaries' income (Ibid.).

ii) Community Residential Units (CRUs)

This programme, formerly the Hostel Redevelopment Programme, is part of the national rental housing strategy. It entails redeveloping apartheid-era hostels, dilapidated pre- and post-1994 government housing stock, and other “dysfunctional/ abandoned/ distressed” public or private buildings to be used as rental stock for very low-income groups (Shisaka, 2010: 2). The market for CRUs - households earning R800 - R3500 per month - is similar to that of BNG. But whereas BNG consists of newly built units to be acquired/owned by beneficiaries, CRUs are rental units in repurposed buildings (Ibid.).

As the only public housing programme that provides rental accommodation for very low income groups, CRUs have struggled to satisfy the substantial demand for this type of housing (SERI, 2016).

Organising urban redevelopment and the upkeep of rental units requires more administration and human resources than the construction of BNG houses, and so government's limited capacity has made them reluctant to implement CRUs (SERI, 2016) (Hogarth, 2015). This is also one of the only programmes that specifically provides for urban redevelopment for affordable housing, and so the poor implementation of CRUs constrains the overall provision of affordable inner-city housing.

The different types of affordable housing and their eligible market (in terms of income bracket) that have been discussed in the various policies are summed up in Table 4.3 and Figure 4.1 on the following page.

Home loan amount	Monthly home loan repayments without FLISP	FLISP subsidy amount	Your home loan amount stays the same	But your monthly home loan repayments decrease with FLISP
R150,000.00	R1,650.00	R78,775.00	R150,000.00	R750.00
R250,000.00	R2,625.00	R49,400.00	R250,000.00	R2,125.00
R350,000.00	R3,750.00	R20,000.00	R350,000.00	R3,500.00

Table 4.2: Example of monthly mortgage payments without versus with FLISP (<http://housingfinanceafrica.org/flisp-answering-your-questions/>)

Housing type	Definition	Eligible market	Typical unit dimensions
Affordable housing	"Housing that comprises units valued under R500 000, including housing in former African, coloured or Indian townships, government-subsidised housing and new housing developed by the private sector" (Tissington, 2011: 40).	Not regulated because it is not an official housing category, but usually includes households earning less than R15 000 per month (pm) .	Varied/ unregulated.
BNG/ Free basic housing	Units in a national housing project, built according to the Breaking New Ground (BNG) policy. The beneficiary receives ownership of a free house in a national housing project.	Households earning less than R3500 pm.	Minimum gross floor area of 40m² . Usually a stand-alone unit or part of a low- to medium-density complex.
Community Residential Units	Government-owned rental stock, usually consisting of redeveloped hostels or abandoned buildings.	Households earning R800 - R3500 pm.	Varied.
Gap housing	Housing that caters to households earning more than would qualify them for a government subsidy, but less than would enable them to get a home loan from a bank. Government housing programmes that cater to this market are Social Housing, Inclusionary housing, and Finance-Linked Individual Subsidy Programme (FLISP) .	The official definition of the 'gap housing market' is households who earn R3 500 - R7 000 pm , but due to banks' reluctance to provide home loans to low-income earners, in reality the gap market is households earning R3500 - R15 000 pm .	Varied/ unregulated.
Social housing	Rental housing for low-income groups that is managed by a Social Housing Institution and regulated by the Social Housing Regulatory Authority (SHRA).	Households earning R1500 - R15 000pm.	Self-contained, with a minimum gross floor space of 30m² . Usually part of a medium- to high-density complex.
Inclusionary housing	Housing provided through public-private partnership for low-income and lower-middle income households in areas they might otherwise be excluded from due to market forces.	Not specified, but the low- to lower-middle income bracket comprises households earning from R1500 to about R15 000pm.	Same as Social Housing.

Table 4.3: Affordable housing types and definitions in South Africa (Author, 2017, using Tissington, 2011, McGaffin & Kirova, 2016, Hogarth, 2015, and ALDHC, 2012)

4.1.2 Policy & Legislation in Relation to Affordable Housing Discourse

The transition from RDP to BNG marks a policy shift away from the supply-driven approach that prioritises the quantity of individual housing units provided. Policy is adopting a more demand-driven model, where the goal is to create comprehensive human settlements whose design considers social-economic and environmental needs, and which provide a range of options in terms of price, typology, tenure and other aspects. The slew of housing programmes such as CRUs, Social Housing, Inclusionary Housing, and FLISP provide for alternatives to the BNG 'free units for ownership' model. However, the choice represented in these policies has not manifested significantly in recent national housing projects. The critiques levelled at each individual policy or programme feed into broader debates around affordable housing, particularly around what models should be prioritised, and whom their markets should be.

The critiques of Social Housing's rental model and of the overall lack of programmes dedicated to inner city housing speak to the debate over affordable housing models. Rentals can enable upward mobility and are more financially accessible as they do not require mortgages, but the lack of secure tenureship means that tenants are vulnerable to evictions. Further, in the context of the country's history of black South Africans (many of whom now comprise the low-income market) being dispossessed of their land, it can be seen as unjust to have a policy that prevents low income groups from obtaining secure land tenure. Alongside the issue of tenureship is the issue of housing location, which informs the extent to which government-housing units that do provide secure tenure are valuable assets to their owners

(Rust et al, 2009). For although the BNG policy aims to provide housing closer to urban centres, it does not provide strategies for how to overcome the issues that have been preventing this. The two main housing programmes that are specifically targeted at providing housing in urban centres are either seen as too resource intensive (CRUs) or else do not have legal backing (Inclusionary Housing), and so have had limited implementation. The lack of supporting legislature for Inclusionary Housing also means that there is no legal requirement for private sector developers to contribute to affordable housing delivery. This therefore places full responsibility for this momentous task on an already-constrained government (Hogarth, 2015).

There are also debates around the housing markets that affordable housing should target. The range of different government housing and subsidy programmes try to cater to the needs of different low-income groups, but there is still a gap in the supply of housing. This is because government overestimates the affordability of market housing. Further, categorising housing markets solely by income blurs the diversity of needs that exist in relation to other variables such as the age and size of the household. These also inform the type of housing that households need and choose (McGaffin & Kirova, 2016). Thus, although there has been a shift towards a demand-driven approach to housing delivery, 'demand' is still narrowly understood as primarily being related to income and affordability.

This policy review and discourse analysis have established a range of affordable housing markets and models. The following section will explore these in relation to Cape Town's housing market to determine which models are in demand and by whom.

R0- R800	R801 - R1500	R1501 - R3500	R3501 - R5000	R5001 - R7500	R7501 - R10 000	R10 001 - R15 000	> R15 000
BNG/ Free basic housing (ownership)							
Community Residential Units (rental)							
Social Housing (rental)							
Inclusionary Housing (rental or ownership)							
Finance-Linked Individual Subsidy (FLISP) (ownership)							
							Open market

Figure 4.1: The housing programmes/ subsidies and tenure models available to each income bracket in South Africa (Author, 2017, adapted from Del Monte and Van der Mey in Hogarth, 2015).

4.2 The Housing Market in Cape Town

The previous section highlighted the need for a more nuanced understanding of housing markets in order to provide affordable housing that fulfils the needs of its users. With this in mind, this section will analyse Cape Town's affordable housing market in order to find out what the demand is for the different housing and subsidy models discussed in the previous section, and what other factors inform the segmentation of the market.

4.2.1 Housing propensities

In the context of the need for a more nuanced assessment of housing and markets, the concept of housing propensities is crucial. Housing propensities are the "housing characteristics (type, tenure, location and other features) households choose based on household characteristics (such as age, income, family size and life stage)" (Hogarth, 2015: 39). Income is often regarded as the most important household characteristic. It determines what dwellings households can afford to buy/ rent, thus narrowing the selection significantly. However, affordability is not the only criterion that households use when choosing a home; there are many other variables involved in different households' choices of which house best suits their needs. To analyse propensities is to take into account these variables in both the demand for and supply of housing. The following subsections will use the concept of propensities to disaggregate the supply and and segment demand of Cape Town's housing context.

4.2.2 Supply

Overall housing supply in Cape Town over the past ten years has been about 15 000 - 20 000 units per year, which can be disaggregated into the

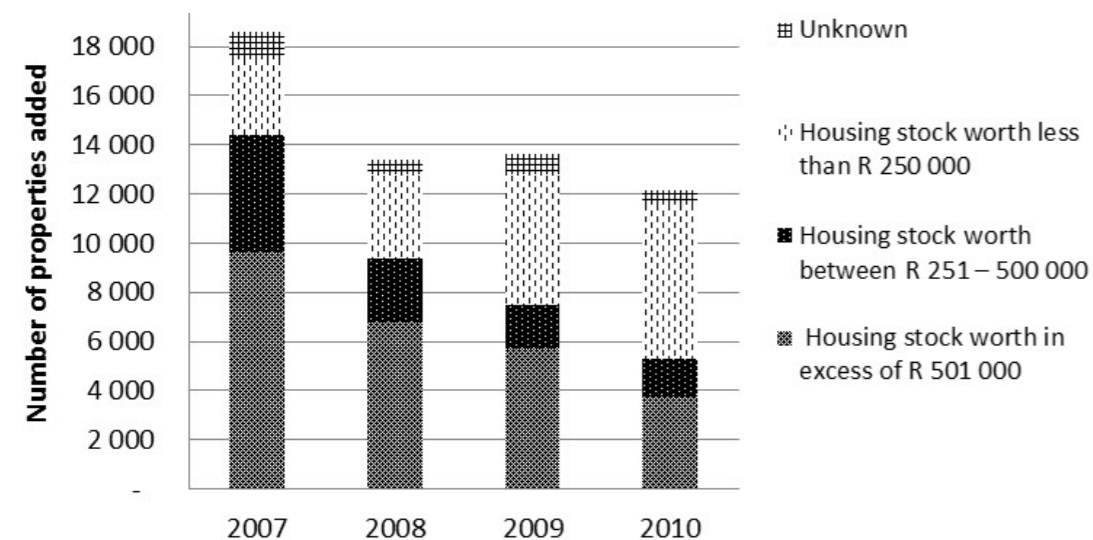


Figure 4.3: Number of new property registrations by value band in Cape Town, 2007-2010 (ALHDC, 2012).

submarkets of open market, state-assisted, and informal (CoCT, 2017). As Figure 4.2 shows, the informal sector is increasingly the primary provider of housing, with market housing taking a dip after the 2008 recession, and government housing remaining low. The state-assisted housing supply rate is about 5000 units annually, which means it would take nearly 70 years just to clear the existing housing backlog of 345 000 units (CoCT, 2017).

Affordable housing

Despite this lag in government housing supply, a study by ALHDC (2012) found that Cape Town's overall affordable housing market was active and growing. While the market for housing valued at *more than* R500 000 suffered after the 2008 recession, Figure 4.3 shows that the number of new *affordable* properties registered between increased significantly. By 2010, 52% of all new registrations were valued at less than R500 000 (ALHDC, 2012).

However, the spatial distribution of these units is problematic. In 2010, 37% of all CT's registered residential properties were valued at under R500 000, and more than 80% of these properties were located within identified affordable areas, suggesting high concentration of affordable units in these areas (ALHDC, 2012). This is a problem because, as Map 4.1 shows, CT's affordable areas are on the urban periphery far from jobs and amenities. Further, although affordable properties comprise nearly half of the total number of properties in the metro, their total area is negligible. This suggests that affordable areas consist of many small properties crammed into a small area, which results in overcrowding and inadequate housing conditions. Thus, the affordability of the properties is only due to their poor location and their overcrowded conditions.

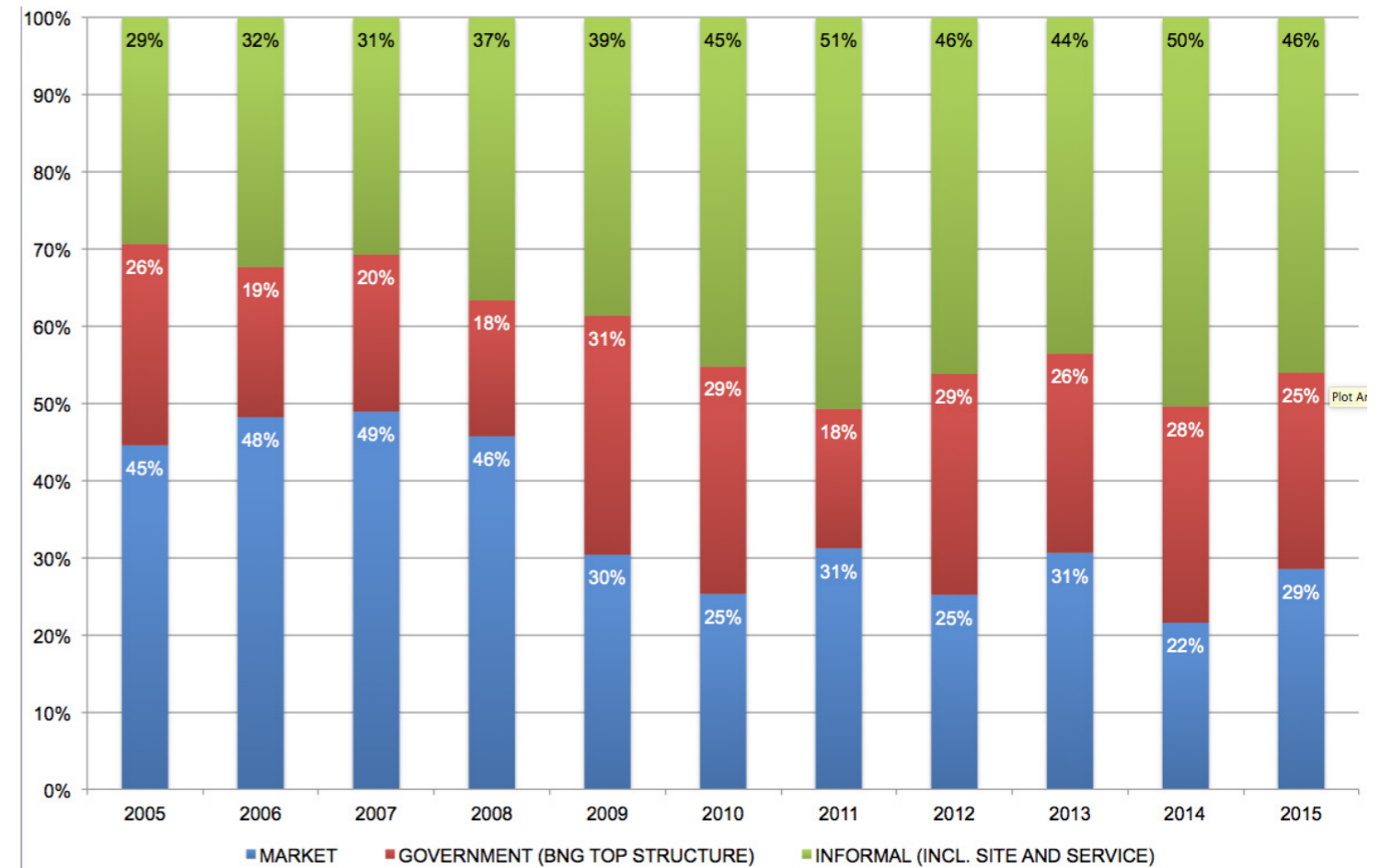
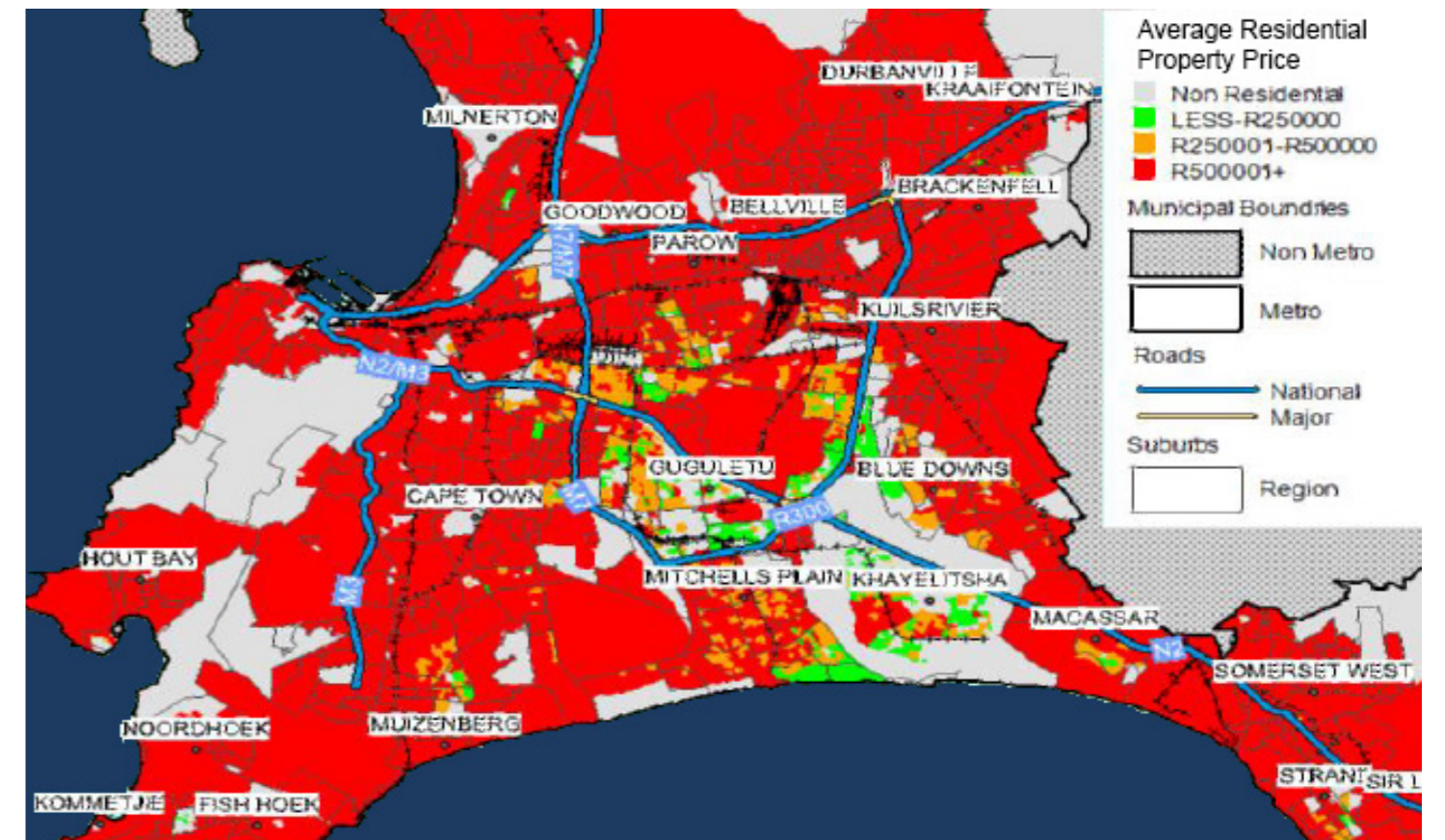


Figure 4.2: Cape Town annual housing supply by source, 2005 - 2015 (Source: Rabe, 2016).



Map 4.1: Affordable suburbs in Cape Town, 2011 (ALHDC, 2012).

Housing types and densities

The housing supply in Cape Town is dominated by freestanding units in both the formal and informal sectors. Figure 4.4 shows that in 2015, roughly 7500 of the approximately 18 750 new units built were formal free standing houses, and about 8750 were informal units, which are usually also free standing due to the light materials they use. Only about 2500 units were townhouses or flats. This dominance of freestanding dwelling units shows that residential development is taking the form of low density suburban sprawl, which is inefficient for service delivery. It is also detrimental to the environment, because increased built surface hinders the land's capacity to absorb and replenish its water supplies.

4.2.3 Demand

Housing demand consists of “effective demand (those who are willing and able to pay for available housing) plus social demand (those who need government assistance to access housing)” (Hogarth, 2015: 35). This segments the housing market according to income. Social demand can be understood as households earning below R7000pm who qualify for a fully subsidised house, while effective demand ostensibly comprises households earning above this who are presumed to be able to afford mortgages and market housing. However,

as mentioned previously, this creates a ‘gap’ in the market. Households earning between R7000 and R15 000 do not qualify for full subsidies, but also generally cannot afford market housing, even with partial subsidy programmes such as FLISP.

It is difficult to segment Cape Town’s housing market into the categories of subsidy/ gap/ market that have been discussed, because their income categories do not align with those used to record household income in the census as represented in Figure 4.5 (Hogarth, 2015).

However, if the housing market categories are adapted slightly to fit the census income brackets, Cape Town’s market can be segmented roughly as shown in Table 4.3. From this, we can see that the subsidy and gap markets combined make up nearly 75% of Cape Town’s housing market. However, the analysis of household income, together with the actual prices of properties in Cape Town’s housing supply shown in Table 4.4, reveals that there is a shortage of housing that is affordable to these households. Approximately 403 000 additional affordable properties (valued at less than R368 443) would need to be provided to supply the demand represented by the subsidy and gap market.

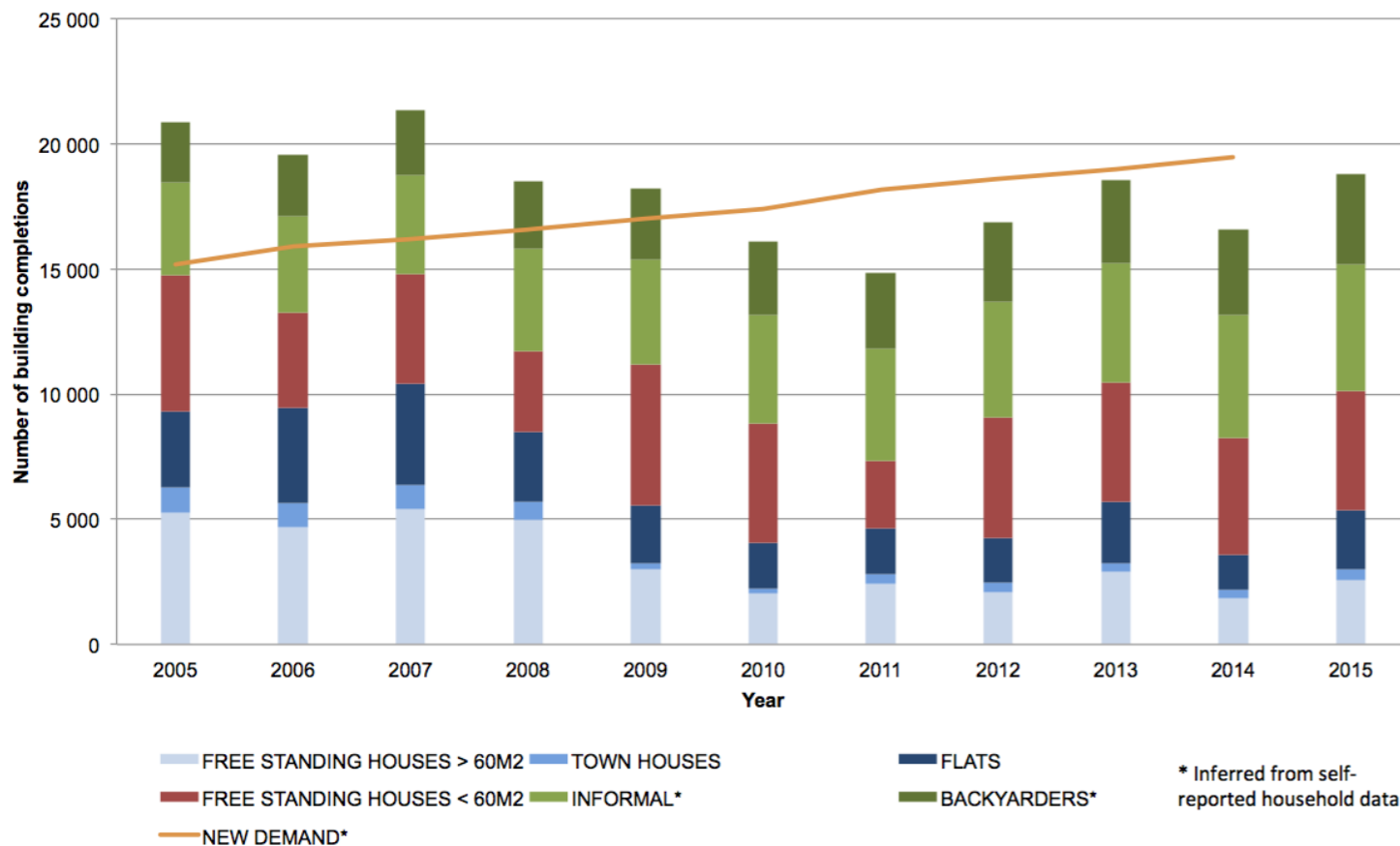


Figure 4.4: Cape Town housing supply by typology, 2005-2015 (Rabe, 2016).

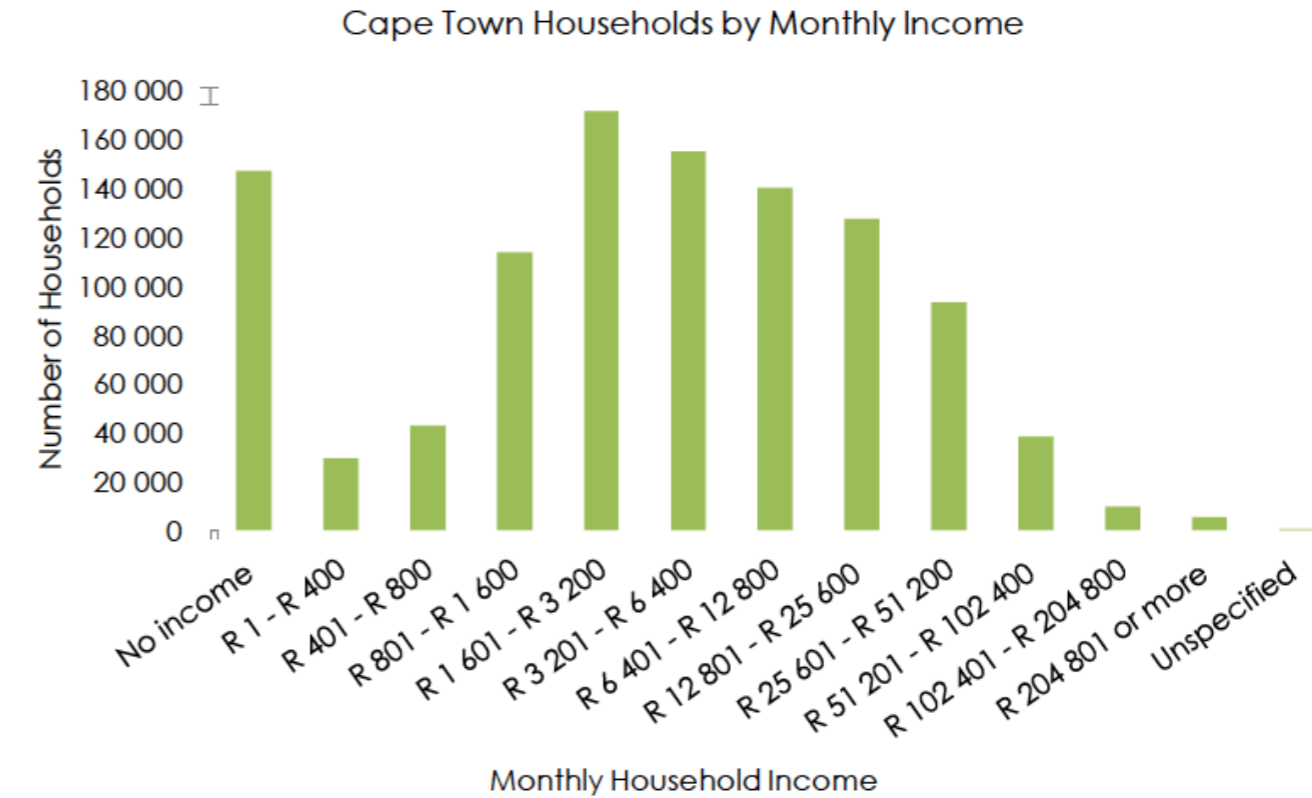


Figure 4.5: Distribution of Cape Town households by monthly income, 2011 (Hogarth, 2015).

Market category	Subsidy (R0 - R3 200 pm)	Gap (R3 201 - R12 800 pm)	Market (>R12 800 pm)
No. of households	502 409	293 775	272 317
% of total households	47%	27.5%	25.5%

Table 4.3: Percentage of households in each (adapted) housing market category, Cape Town, 2011 (Author, 2017, data from Hogarth, 2015)

Demand: Households			Supply: Residential Properties			Shortage/Surplus ¹	
Income Category	No. Households	% of Total	Value Category	No. Properties	% of Total	No. Properties	% of Total Stock
R 0	146 517	13.71%	R 0	0	0.00%	-146 517	-22.02%
R 1 to R 400	29 373	2.75%	R 1 to R 11 514	0	0.00%	-29 373	-4.41%
R 401 to R 800	42 418	3.97%	R 11 515 to R 23 028	0	0.00%	-42 418	-6.37%
R 801 to R 1 600	113 277	10.60%	R 23 029 to R 46 055	0	0.00%	-113 277	-17.02%
R 1 601 to R 3 200	170 824	15.99%	R 46 056 to R 92 111	48 354	7.27%	-122 470	-18.40%
R 3 201 to R 6 400	154 427	14.45%	R 92 112 to R 184 222	52 021	7.82%	-102 406	-15.39%
R 6 401 to R 12 800	139 348	13.04%	R 184 223 to R 368 443	131 106	19.70%	-8 242	-1.24%
R 12 801 to R 25 600	126 625	11.85%	R 368 444 to R 736 886	172 874	25.98%	46 249	6.95%
R 25 601 to R 51 200	92 860	8.69%	R 736 887 to R 1 473 772	160 284	24.08%	67 424	10.13%
R 51 201 to R 102 400	38 018	3.56%	R 1 473 773 to R 2 947 545	70 919	10.66%	32 901	4.94%
R 102 401 to R 204 800	9 748	0.91%	R 2 947 546 to R 5 895 089	22 880	3.44%	13 132	1.97%
R 204 801 and up	5 066	0.47%	R 5 895 090 and up	7 075	1.06%	2 009	0.30%
TOTAL	1 068 501	99.99%		665 513	100.00%	-402 988	-60.55%

Table 4.4: Gap in Cape Town’s housing supply, 2015 (Hogarth, 2015 in McGaffin, 2016)

Beyond 'subsidy/ gap/ market': Segmenting the housing market along multiple attributes

It is important to reiterate that income should not be the only variable used to analyse housing demand, and that within the broad categories of 'subsidy', 'gap', and 'market' housing demand there are a range of other variables that inform demand. These preferences that different households have for different types of housing are known as 'propensities' (Hogarth, 2015). McGaffin & Kirova (2016) analyse

the propensities of Cape Town's housing market, with a particular focus on the household characteristics that determine what housing typology the household chooses. The demand for single-detached houses and flats/apartments (based on census data for the households occupying these units in 2011) was segmented according to several household characteristics. This creates a nuanced breakdown of the specific market for each typology. Some of the main findings are represented in Figures 4.6 and 4.7.

Figure 6 shows that households that are more likely to choose single-detached houses usually consist of 2-4 members, with a household head aged between 35-59, and with an annual income of between R19 201 - R614 400. Households likely to choose flats,

with a household head aged between 25-39, and with an annual income of between R19 201 - R307 200. This strengthens the argument that variables other than just income can have a significant impact on the housing needs and choices of households.

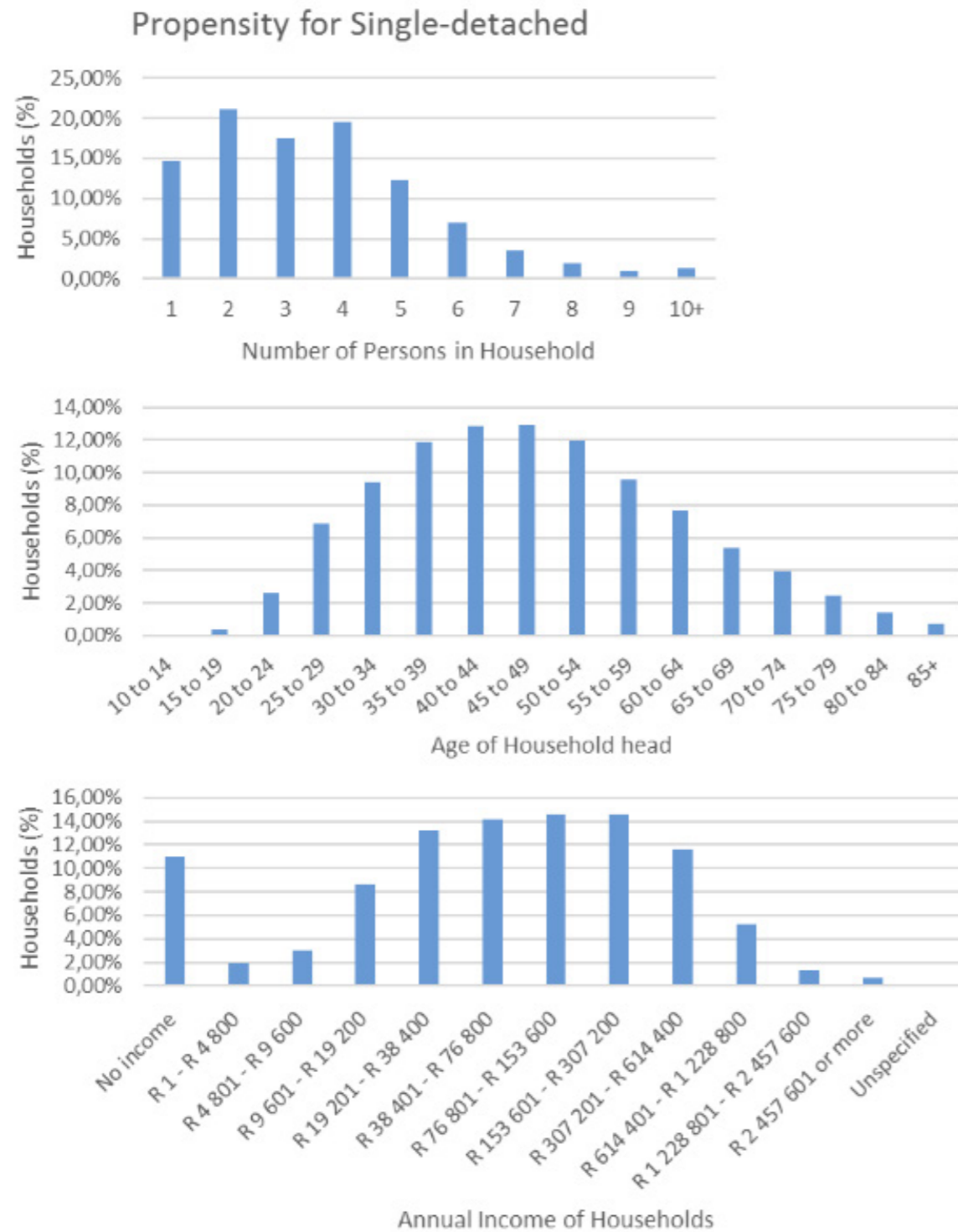


Figure 4.6: Propensity for single detached housing by household size, age of household head, and annual household income in Cape Town, 2011 (McGaffin & Kirova, 2016).

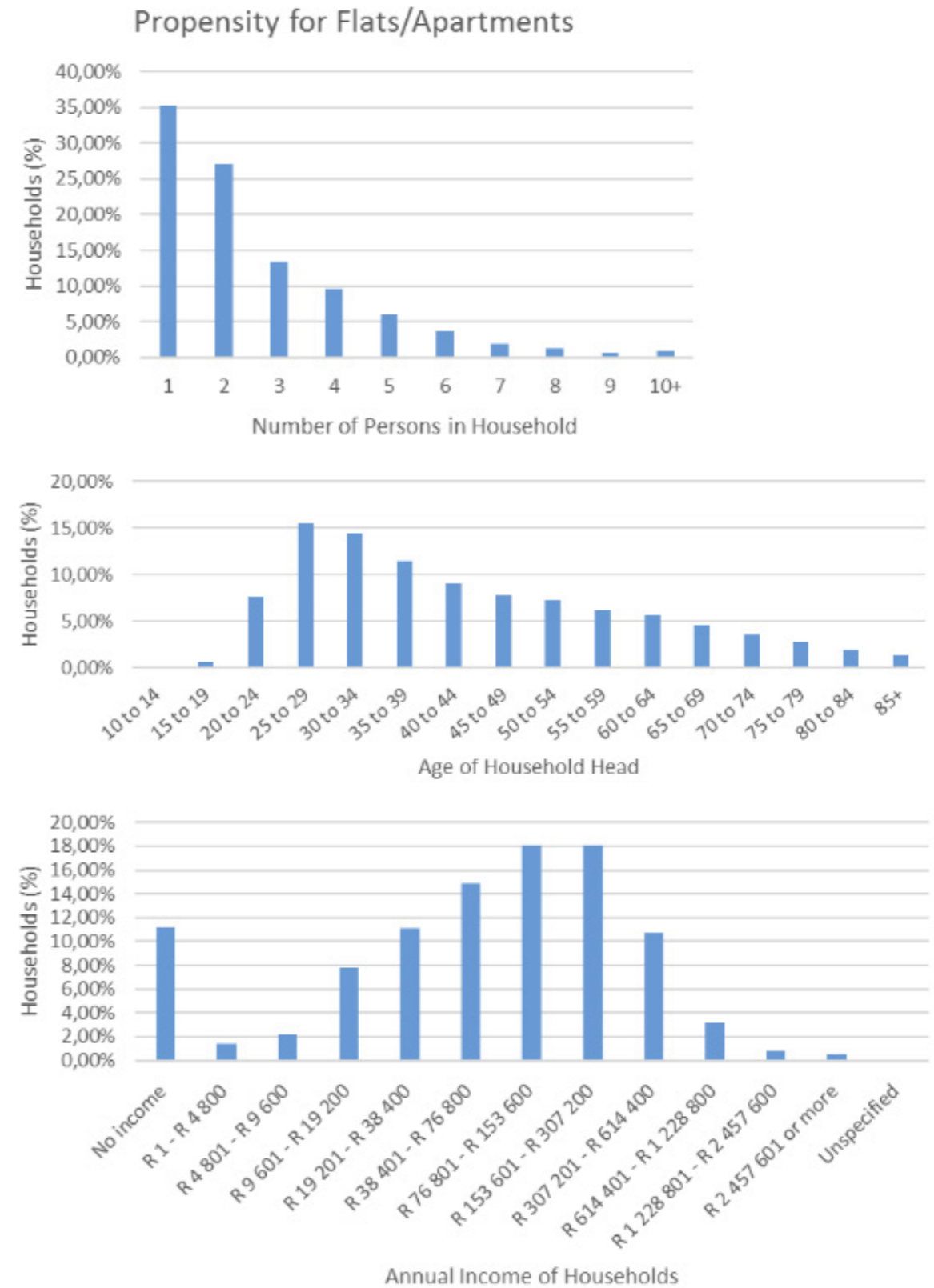


Figure 4.7: Propensity for flats/ apartments by household size, age of household head, and annual household income in Cape Town, 2011 (McGaffin & Kirova, 2016).

Future demand: population growth trends

Cape Town's population is expected to grow to approximately 4.63 million people by 2040, which is an increase of 630 000 from 2016's population of 4 million (CoCT, 2017). This growth is predicted to include an increase in working age adults (ages 45-64) and dependent seniors (ages 65+), and a decline in working age and dependent youth (ages 0-34), as shown in Figure 4.8. This translates to a growth in housing demand from people older than 35, and the types of housing that they might require.

4.2.4 What does this mean for the development of affordable housing in the Foreshore?

The findings of the previous section's housing market analysis provide an understanding of who needs affordable housing, and what type of affordable housing they need. This information can be used to determine what type of affordable housing is best for the Foreshore development.

The location of the Foreshore significantly impacts housing propensities in terms of the housing typologies that would be appropriate, the jobs and salaries that are available, and the range of social facilities in the vicinity. Given the urban context of the Foreshore site, the new housing should be high density flats rather than suburban, single-detached houses. Therefore, the housing market for the Foreshore's housing should more or less fit the profile of households with a propensity for flats/apartments. This means that the target market is households of 1-2 members, aged between 25 and 39, with an annual income of R19 201 - R307 200 (or R1600 - R25 600 per month).

But this income bracket can be narrowed down further by analysing the types of lower-income jobs are available in the CBD, as these workers would be most in need of affordable housing in the Foreshore. Based on the average monthly salaries of some lower-paying jobs in the top five most prominent employment fields in the CBD, Table 4.5 shows that the Foreshore's affordable housing should cater to households earning about R3450 - R14 000 per month.

This income bracket would qualify, on economic grounds, for Social Housing, Inclusionary Housing, and FLISP. However, the small size of the households with a propensity for apartments means that many of these households would not qualify for

the housing subsidies because they do not have financial dependents. This suggests that some Foreshore housing should include units suited to larger households in order to cater to the subsidy and gap market. There should also be affordable units for low-income households that do not have enough members to qualify for subsidies.

The population growth estimates present a conundrum. The population group with propensity for flats is predicted to decrease in the following decades. This suggests that housing in the Foreshore should find ways to also cater to an older demographic if it is to keep up with the changes in Cape Town's population structure. This could include providing larger units and sectional titles that would cater to households looking to establish families and settle down. On the other hand, the younger demographic of the household profile indicated in McGaffin & Kirova's (2016) propensity study suggests that there might be more demand for rental units that enable more flexibility for people who are likely to be starting out in their careers. There should therefore be a mix of units sizes and tenure options available to cater to people at different life stages.

Therefore, affordable housing in the Foreshore should consist of apartments with a range of sizes and tenure options to accommodate households and individuals of different ages and life stages. The market for this housing should be people working in the CBD whose household income is in the range of R3500 - R14 000 per month, some of whom might qualify for housing subsidies. Returning to the housing policies discussed in 4.1, Social Housing and FLISP would be the most appropriate programmes to cater to this market.

4.3 Conclusion

The policy review in Section 1 of this chapter highlighted the need for affordable housing that is located in the urban centre. It also called for a more nuanced understanding of affordable housing models and markets. Section 2 then provided this nuanced analysis by disaggregating the supply and segmenting the demand of Cape Town's housing market. This showed that the affordable housing models that would be most suited to the Foreshore development are Social Housing and FLISP. These are suited to an urban context, and together they cover the demand for affordable rental and sectional title units. It is also important that the Foreshore development includes a range of apartment sizes and tenure options to accommodate different needs of its heterogeneous market.

Population growth predictions for Cape Town, 2015 - 2040

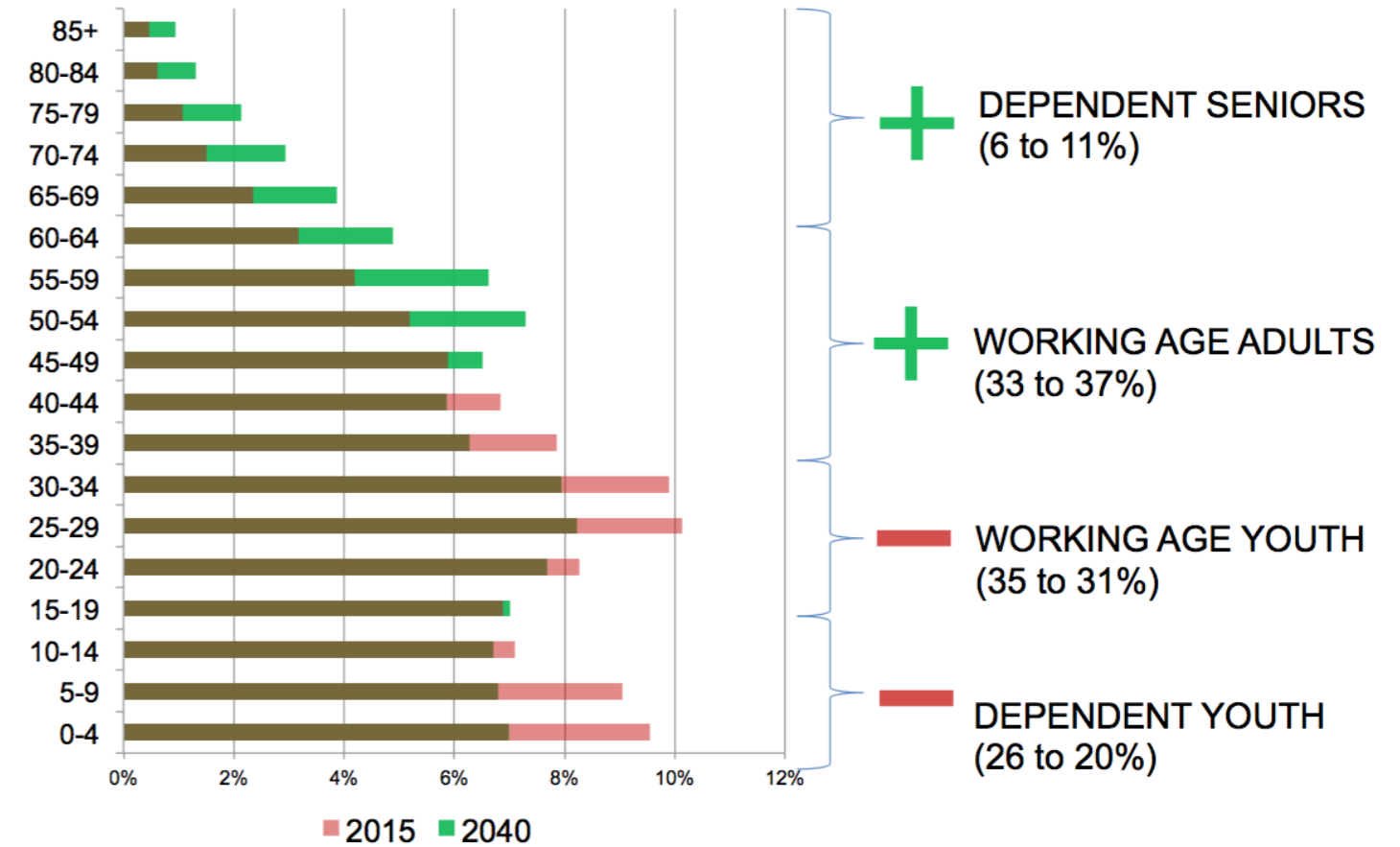


Figure 4.8: Population growth predictions for Cape Town from 2015 to 2040 (Rabe, 2016).

<i>Business type</i>	<i>Number and % of businesses in CBD, 2016</i>	<i>Average monthly salaries for some lower-paying jobs in this field, 2017</i>
1. Retail (general and entertainment)	951 (31%)	Janitors and Cashiers: +/-R3500 per month Retail sales manager: R12 880 pm
2. Legal services	678 (22%)	Receptionist: R6040 pm Legal assistant: R10 260 pm
3. Financial services	217 (7%)	Insurance sales agent: R5 750 pm Bank clerk: R8000 pm
4. Telecommunication & media	210 (6.9%)	Call centre representative: R7740 pm News journalist: R14 000 pm
5. Specialist services	189 (6%)	Dental assistant: R6870 pm Nurse: R11 480 pm

Table 4.5: Businesses in the CBD, 2016 (Author, 2017, adapted from CCID State of the Central City, 2017, and using Payscale.com)

5. SPATIAL PRINCIPLES

The previous chapter explored the concept of affordable housing to understand what kind would be appropriate for the Foreshore site. This chapter explores other spatial objectives and principles that will ensure that the design of this affordable housing is holistically realised in my plan for the development of the Foreshore, which will be presented in Chapter 6. The first section outlines the core values that will shape my proposed plan for the Foreshore. These values are then grounded in a set of spatial planning criteria. Finally, these values and criteria are woven together to create a vision of the Foreshore site.

5.1 Values

The values briefly outlined in Chapter 2 will now be discussed in more detail, specifically with regards to their underlying spatial planning criteria (see Table 5.1).

Integration & Equity

'Integration' here refers to three layers: between humans across their differences; between humans and the natural environment; and between land and sea. This integration must be equitable to people and the environment. Equity is distinguished from equality in that it acknowledges that people do not have equal needs. Those in greater need should receive greater assistance. This principle is directly linked to the focus on providing affordable housing in the Foreshore as a way of assisting financially needy groups to live in the city centre.

Permeability & Accessibility

The site should be easily accessible to pedestrians and cyclists, as well as accommodating motor traffic.

Vitality & Sense of Place

This entails bringing life and activity into the site, which is currently dominated by industria, cars, and dead spaces. Introducing a residential community into the area will help to give it vitality, as will creating a mix of uses and increased pedestrian spaces in the site. Increasing the amount of trees and other green elements in the site will also add to its visual and actual vitality. These interventions should enhance the sense of place of the site, giving it a unique spatial character that is appropriate to its context within the City Bowl and Cape Town. This will in turn make the space more legible.

Choice & Opportunity

There should be a range of housing models, job opportunities, recreational options, and transport modes available to users of the space. Through this range of choices, the site should provide opportunities for its users to improve their position economically, socially, and emotionally.

Ecological Resilience

Development should enable the site to be resilient to the effects of climate change, including sea level rise and increase in episodic events such as floods. The site's location right at the water's edge makes this a particularly pertinent concern. Being resilient also entails actively reducing the site's contribution to climate change through measures such as reducing private car usership and designing energy- and water-efficient spaces.

5.2 Spatial Planning Criteria

This section translates the values outlined in the previous section into a set of key spatial planning criteria. These will inform my concept plan for the Foreshore, and help to create holistic urban neighbourhoods.

5.2.1 "An urban fabric for an urban life": High density and compact form

This principle, coined by Jacobs & Appleyard (2003 [1987]) alludes to the effect that built form has on people's experience and behaviour in space. Their argument is that the built environment of a city needs to have high residential densities to enable the types of 'urban life' and activities that are expected from cities. 'Density' refers to the number of dwelling units per hectare (du/ha), and can be calculated as 'gross' density (including the land used for roads and other utility areas that support the residential units), or 'net' density (including only the land used for residential properties) (CoCT, 2012 a). For the more conceptual level planning of this dissertation, gross density is a better tool to use. Cape Town's Densification Strategy (2012 a) advises that appropriate densities for urban areas is 75-375 du/ha net density, which translates to about 55-280 du/ha gross, with buildings of 3-7 storeys. The Foreshore site should aim to achieve a density within this range and should be modelled on other urban residential areas close to CBDs, such as Sea Point, which has a gross density of about 100 du/ha. This density in the built form actually aims to represent the amount of people that live within a hectare. If it is assumed that each dwelling unit contains a household of two to three people (calculated as 2.5), this means a gross density of 100 du/ha represents approximately 250 people per hectare.

It is important to think of density as people, because it is people who create the 'urban life' that defines cities. Urban life is a subjective term, but it can be understood as people living, working, and engaging in a range of activities all in close proximity to each other, and within spaces that are largely accessible to the public (Jacobs & Appleyard, 2003 [1987]). This is in contrast to the privatised properties of suburbia. The "number and diversity of small stores and services" to be found in a city is a function of density,

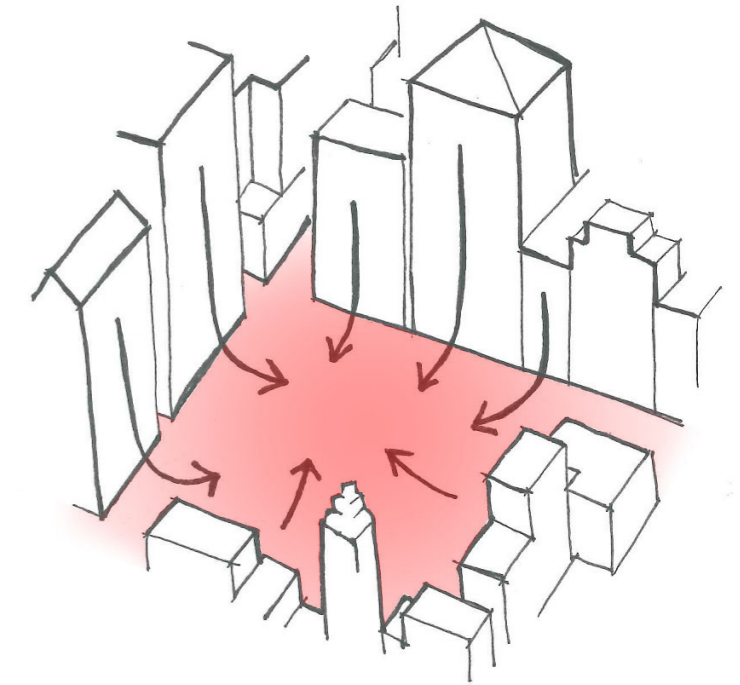


Figure 5.1: Dense, compact urban form generates urban life (Author, 2017)

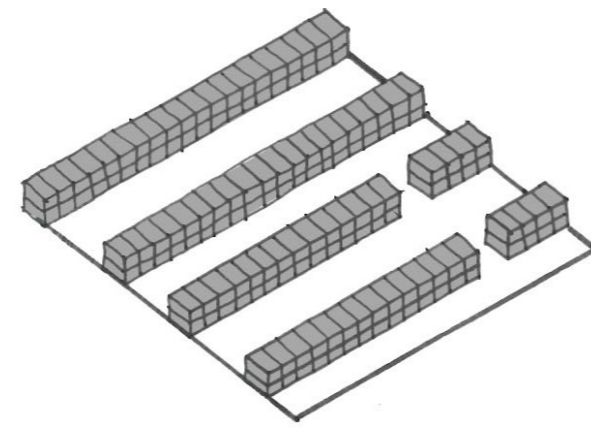
and this facilitates the diversity of activities that is key to urban life (Ibid. p.444). Mass public transport, another urban feature, also requires certain people densities in order to be viable. Regular bus services need a density of 90 persons per hectare along their route in order to be financially viable (Rabe, 2016). High residential densities therefore enable key aspects of urban life.

These densities should be accommodated by building *up* rather than *out*, so as to maintain a compact form. Building multiple storeys increases the amount of space that each person can have within a hectare of land, thus making high densities more liveable. Further, compact form reduces the land consumption of development. This leaves more surface area open for the earth to perform its important ecological function of water reabsorption. In addition to environmental benefits, compact built form also makes for more efficient infrastructure and service provision, as it reduces the area that roads and services need to cover. Therefore, the combination of high densities and a compact form creates a liveable and efficient urban environment.

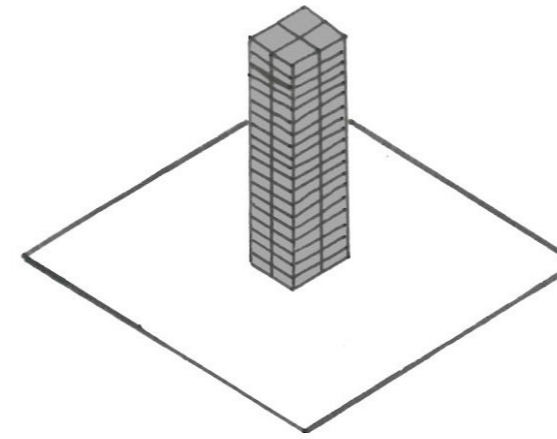
Values	Spatial Planning Criteria
Integration & Equity	<ul style="list-style-type: none"> Affordable housing that has a high density, compact, urban form Strong and accessible connection between land and sea
Vitality & Sense of Place	<ul style="list-style-type: none"> Lively streets
Choice & Opportunity	<ul style="list-style-type: none"> Mix of land uses
Ecological Resilience	<ul style="list-style-type: none"> Environmentally sensitive and sustainable design
Permeability & Accessibility	<ul style="list-style-type: none"> Structuring network of public open space Public transport

Table 5.1: Values and design criteria (Author, 2017)

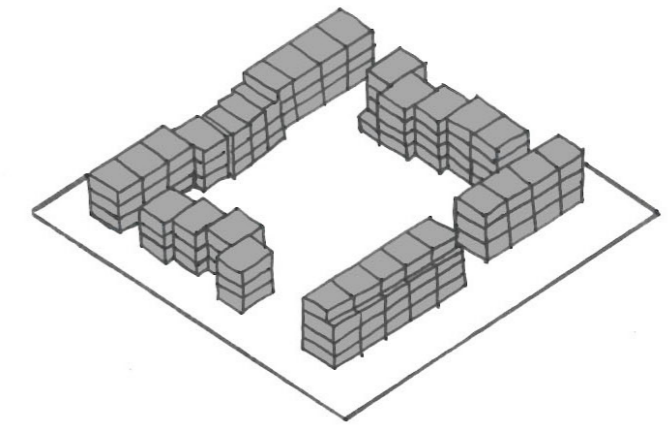
Residential densities can be achieved through a range of typologies, as shown in Figure 5.2. Terrace housing is more suited to suburban areas, as houses are often set back from the street and building heights are relatively low. Tower blocks are space efficient, but are not human scale. The perimeter block is the best design for creating an urban character that is human scale and which balances built form with open space. Perimeter blocks consist of terraced housing that is not set back from the street, so that the buildings define the street and create the opportunity for active street fronts (to be discussed in section 5.2.3). The open space within the block can be individually or communally owned by residents, or else it could be made a publically accessible square.



Terrace



Tower block



Perimeter block

Figure 5.2: The same density articulated in different typologies (Author, 2017, after CoCT, 2012 a).

Copenhagen is a good example of small but high density perimeter blocks that leave space for a courtyard, as seen in Figure 5.3. Buildings are usually five storeys tall, but within one perimeter block these heights can vary. There can be a few buildings of six or seven storeys and some of three or four storeys. Because of the open space in the centre, tall buildings on one side of the block do not block the sunlight for the buildings on the other side.

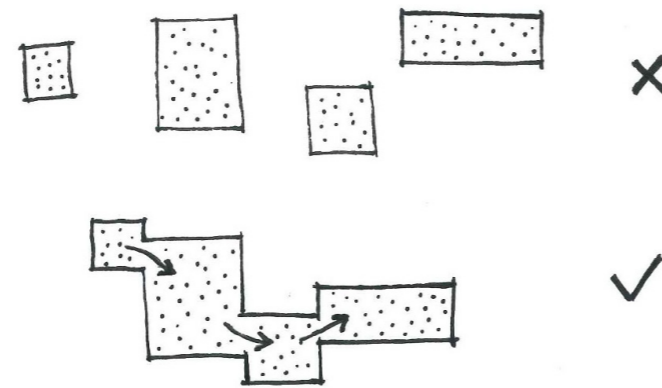


Figure 5.4 (right): Continuous public space system (Author, 2017, after CSIR, 2001)

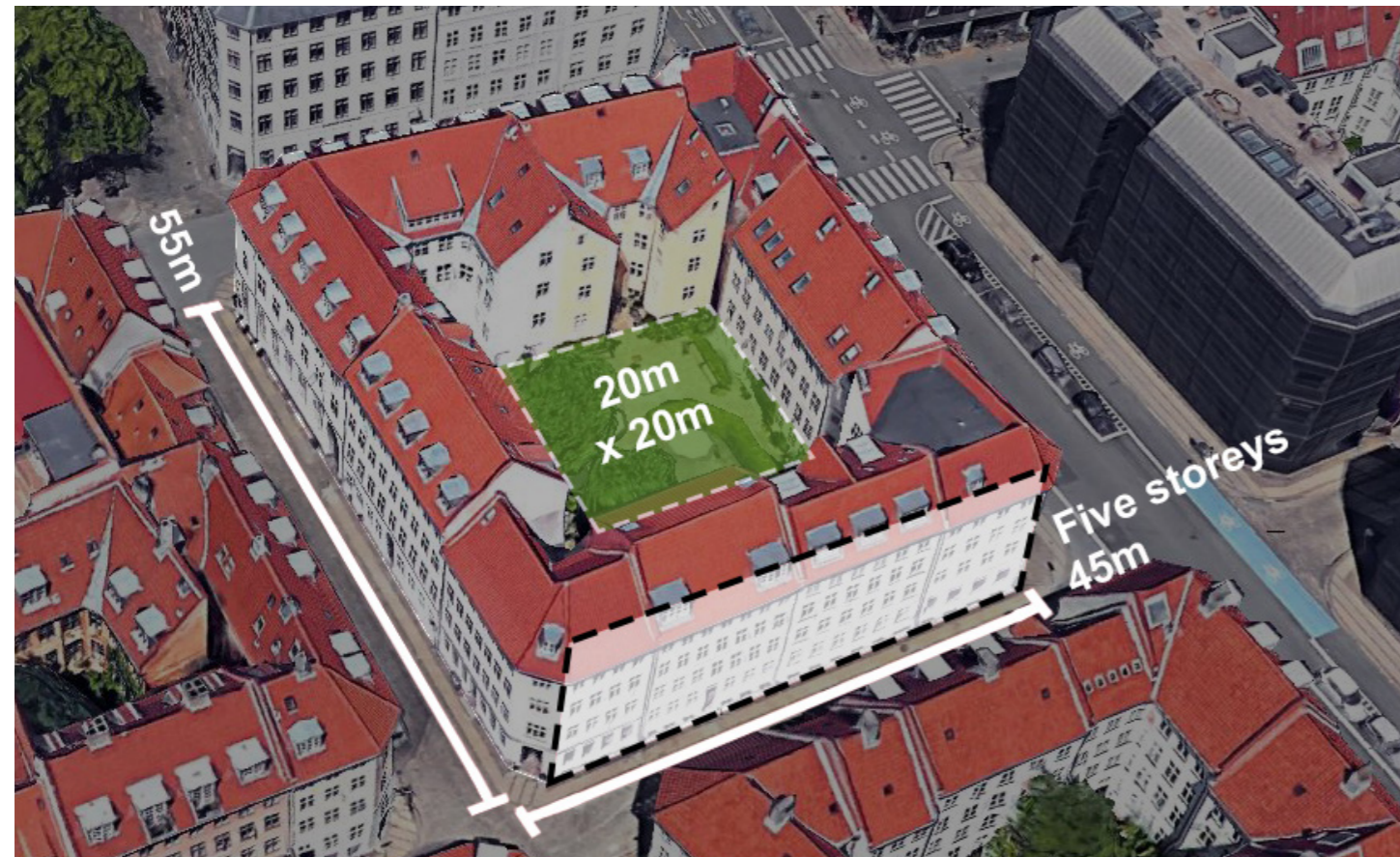


Figure 5.3: Perimeter block and courtyard in Copenhagen (Google Maps, 2017, adapted by author, 2017).

5.2.2 Structuring network of public open space

In high density urban areas, public open space becomes especially important. People have limited private space because their dwellings are smaller, and they rarely have access to private gardens. Public open space - including streets, pavements, squares, and parks - offers the greenery and room for movement that urban apartments cannot always provide. But public space is more than just a space for recreation; the spaces between buildings is where public life takes place (Gehl, 2011 [1971]). Whether it is people bustling along a pavement to get somewhere they need to be, colleagues sitting together in a square during their lunchbreak, children playing in a park, or any activity that places people in a public open space, there is opportunity for social interaction. In this way, one can view the city as "a meeting place and public space as facilitator" (Gehl & Gemzoe, 2000:7). Thus, for a city to be liveable, the public space (or 'life') between buildings must be the core structuring element of its design. Three key design principles for creating good public space are continuity, enclosure, and variety.

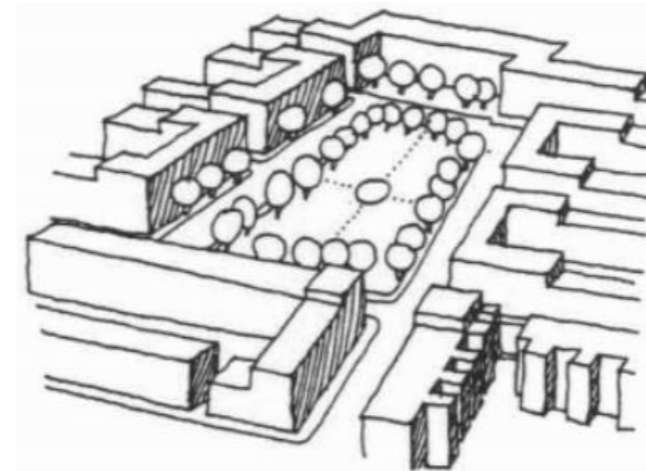


Figure 5.5: Example of a square enclosed by buildings (Tibbalds, 2001)

Continuity

Streets should connect different squares and parks to form a continuous network of public spaces that enables a logical flow of movement between them, as shown in Figure 5.4 (Jacobs, 1961). This should primarily be pedestrian movement, which will be discussed in more detail in the following section on lively streets.

Enclosure

While there should be flow between public spaces, they should also be enclosed by the buildings around them. This creates a sense of definition and protection, as shown in Figure 5.5 (Tibbalds, 2001; Gehl & Gemzoe, 1996). This enclosure helps to direct and contain activity in the space, as shown in Figure 5.6. The buildings that face onto the space should have active interfaces with the street, a principle that will be discussed in the section 5.2.3.

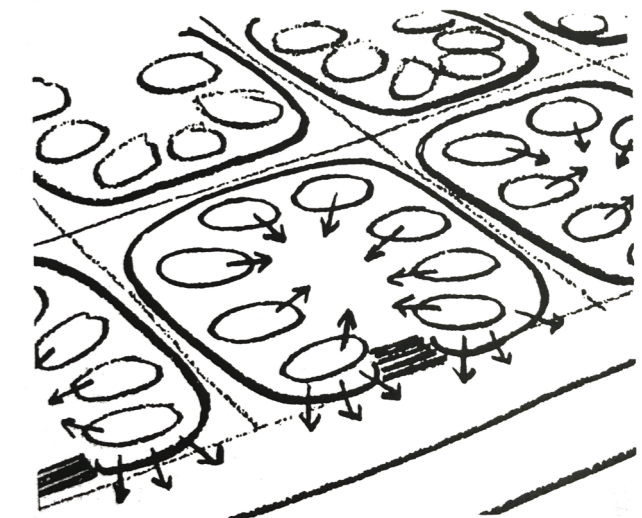


Figure 5.6: Enclosed square contains activity within it (Gehl, 2011).

Variety

There should be a variety of types of public spaces to create interest and a sense of progression along the continuous network of public open space, as diagramatised in Figure 5.7. This includes transitions from soft green parks to paved squares; small, intimate spaces and larger, busier ones; and a general range of activities in the spaces. This variety is illustrated in the peaceful versus active spaces shown in Figures 5.8 and 5.9.

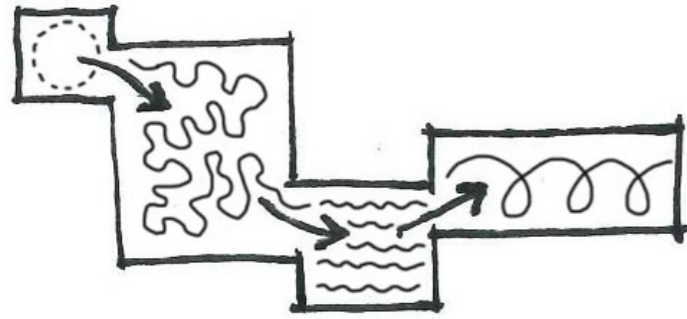


Figure 5.7: Progression through a variety of types of public spaces (Author, 2017)

5.2.3 Lively, pedestrian-friendly streets

The streets that form the connective tissue of the public space network should be lively and pedestrian-friendly. Three key components of creating streets like this are short city blocks in an open grid, a pedestrian-centred mix of modes, and active street fronts. Together, these help to ensure that people “feel safe and secure on the street”, which is crucial to creating a liveable city (Jacobs, 1961: 30).

Open street grid and short city blocks

As Figure 5.10 shows, a grid layout of streets creates an open network that allows more freedom and choice for people moving through the space. Grids are also generally more legible than closed networks because there is a clear line of sight down the straight streets. The city blocks within the grid should be short - about 60-100m - because this is more stimulating and convenient for pedestrians. It provides a range of route options and shortcuts, as seen in Figure 5.11 (Jacobs, 1961).

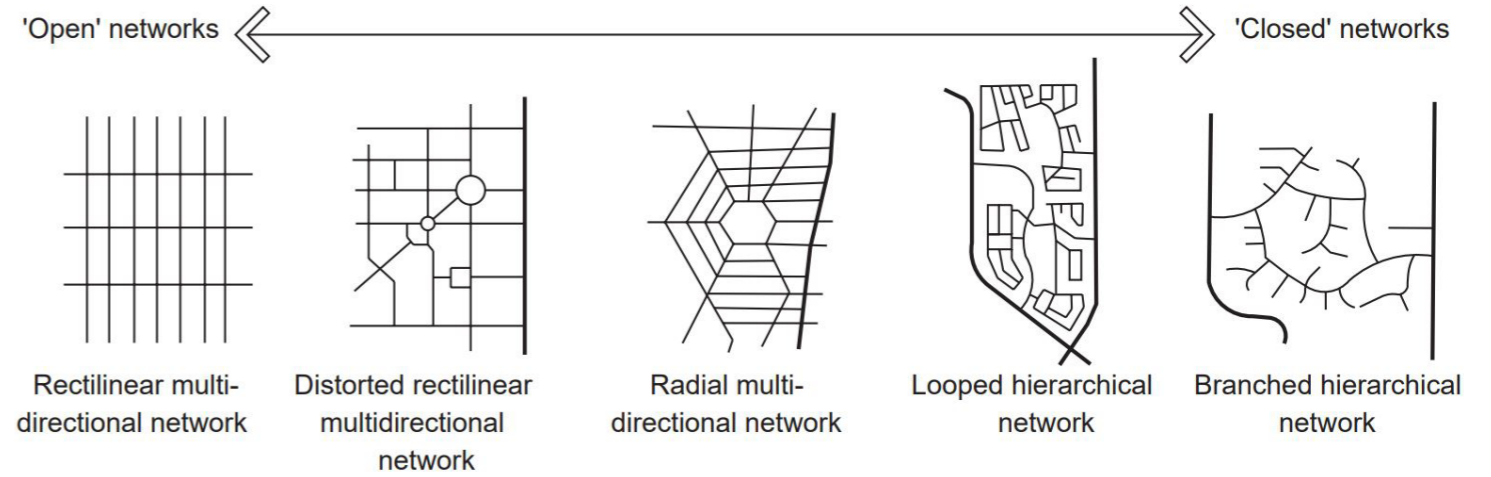


Figure 5.10: Continuum of open to closed street networks (CSIR, 2001).

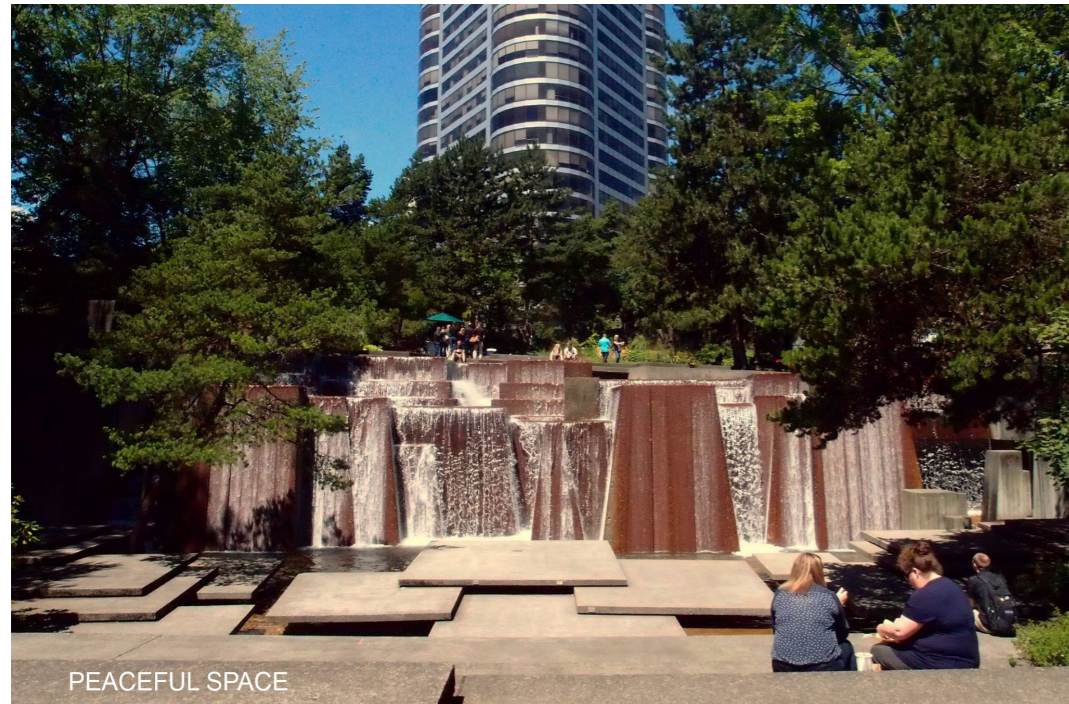


Figure 5.8: Auditorium Plaza in Portland: a peaceful public space (Author, 2016)



Figure 5.9: Salmon Street Springs in Portland: an active space (Author, 2016)

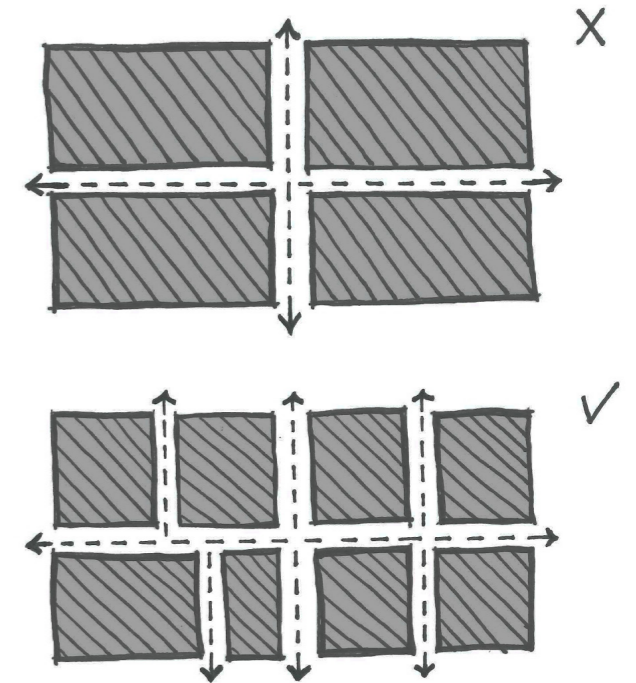


Figure 5.11: Smaller city blocks are more walkable (Author, 2017).

Mixed mode but pedestrian-centred streets

Pedestrian-friendly streets need not be pedestrian-only streets; as long as there are clearly designated and carefully designed zones for different modes of transport and activity, pedestrians and cars can share streets amicably. As Figure 5.12 shows, landscaping on the verge section of the street can create buffers to shield the pedestrian zone from the noise and fast movement of the vehicle zone. Figure 5.13 shows the many different functions each zone of a mixed-mode street can accommodate. The sidewalk zone is particularly diverse in its uses, ranging from movement and bus stops to trade and recreation.

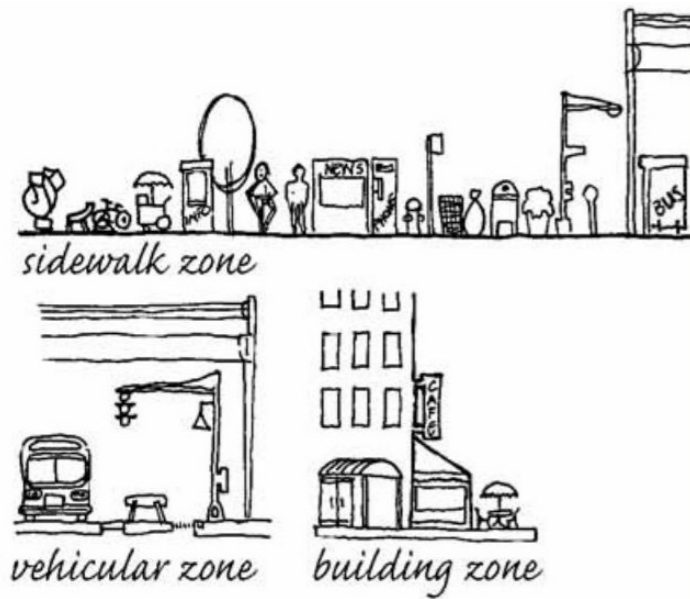


Figure 5.13: Functions of zones in a mixed mode street (CSIR, 2001)

Active street fronts

An active street front is a ground floor building that has a permeable and utilisable interface with the street it faces onto. This can refer to both commercial and residential street fronts. An active residential building might have a stoep that opens directly onto the street, while a commercial building might have a cafe on the ground floor with seating that spills out onto the street. These types of interfaces enable people to look out onto a street, which creates a natural form of surveillance that Jacobs (1961: 30) calls "eyes upon the street" (see Figure 5.14). Even if there are not people looking onto the street at all times, the visibly permeable design has the effect of a panopticon in that there always could be someone watching. This sense of surveillance is effective in reducing crime, and the increased presence of people on the street adds to the vitality of the space (Jacobs, 1961).

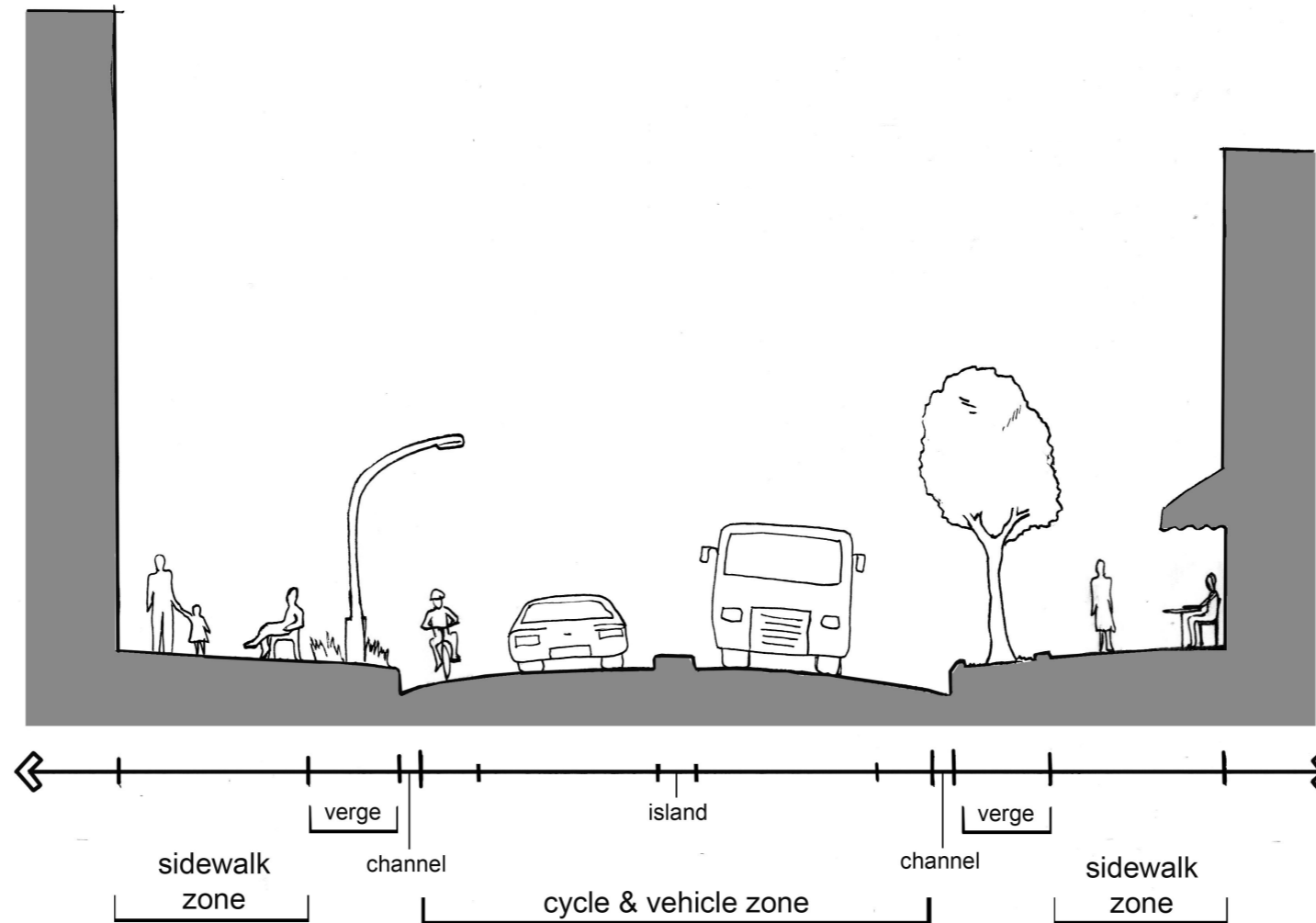


Figure 5.12: Different components of a mixed mode street (Author, 2017)

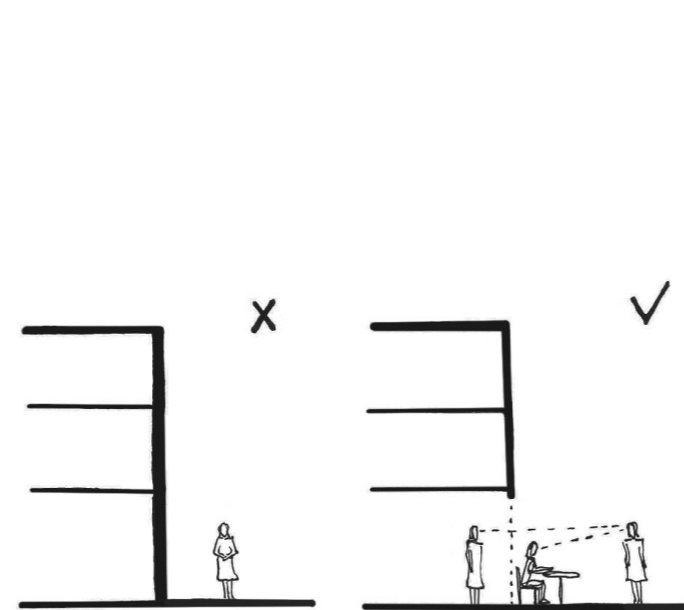


Figure 5.14: Active street fronts create 'eyes on the street' (Author, 2017).

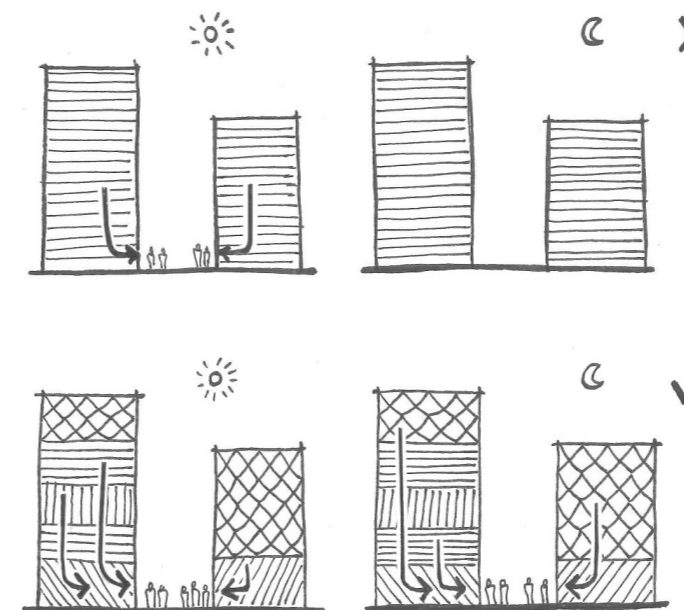


Figure 5.15: Mix of uses increases periods of activity (Author, 2017)

5.2.4 Creating a mix of land uses: Learning from

Modernism's failings

Modernist city planning used rigid zoning schemes to segregate land uses. Cities were seen as spaces of commerce, while residential land use was pushed to the suburbs (Oc & Tiesdell, 1997). This resulted in the concentration of inward-facing office blocks in the city centres. The few other activities in the city centre, such as coffee shops, would close at the end of the working day because they relied on office workers for their business. At night, when workers would all go home to the suburbs, city centres would become empty, unsafe places. Thus, monofunctional land use schemes caused the "erosion of the complexity and vitality of city centres, shaping them into islands of activity alive during the day only" (Oc & Tiesdell, 1997: 9).

This illustrates the importance of creating a mix of different land uses in a city centre. Incorporating residential areas into these largely commercial zones extends the period of activity in the city centre beyond working hours (see Figure 5.15). It also creates a market for different kinds of services and activities, such as schools, grocery shops, and places of worship. This variety of activities "responds to the values of publicness and diversity that encourage local community identity" (Jacobs & Appleyard, 2003 [1987]: 445). Another benefit of combining commercial and residential land uses within a compact form is that it reduces people's transport needs. They no longer have to commute long distances to and from work, and can instead walk or take public transport (Jacobs, 1961). These benefits of mixed use strengthen the argument that the districts, blocks, and buildings that constitute a city should "serve more than one primary function" (Jacobs, 1961; 150). These different functions should "ensure the presence of people who go outdoors on different schedules" (Ibid.).

5.2.5 Efficient, multimodal public transport

Although mixed-use city centres reduce the transport needs of people living in the city, there should still be an efficient and multimodal public transport system available. This should connect the city centre to surrounding areas and link areas within it. Multimodal transport gives commuters more choice in terms of mode and route. If the transport stops and payment system are integrated efficiently, the transfers between modes should be seamless. An example of a good integrated public transport system is Medellin in Colombia, which comprises light and heavy rail trains, buses, minibuses, and 'MetroCables' cable cars. All of these modes can be paid for using a 'Cívica' card, and the stops of the different modes are coordinated with each other so that commuters can switch from trunk routes to feeder routes efficiently (see Figure 5.16). This efficient multimodal system has seen an increase in public transport users. Now, 56% of the city's population use public transport as their main mode of travel (ecomobility.org).

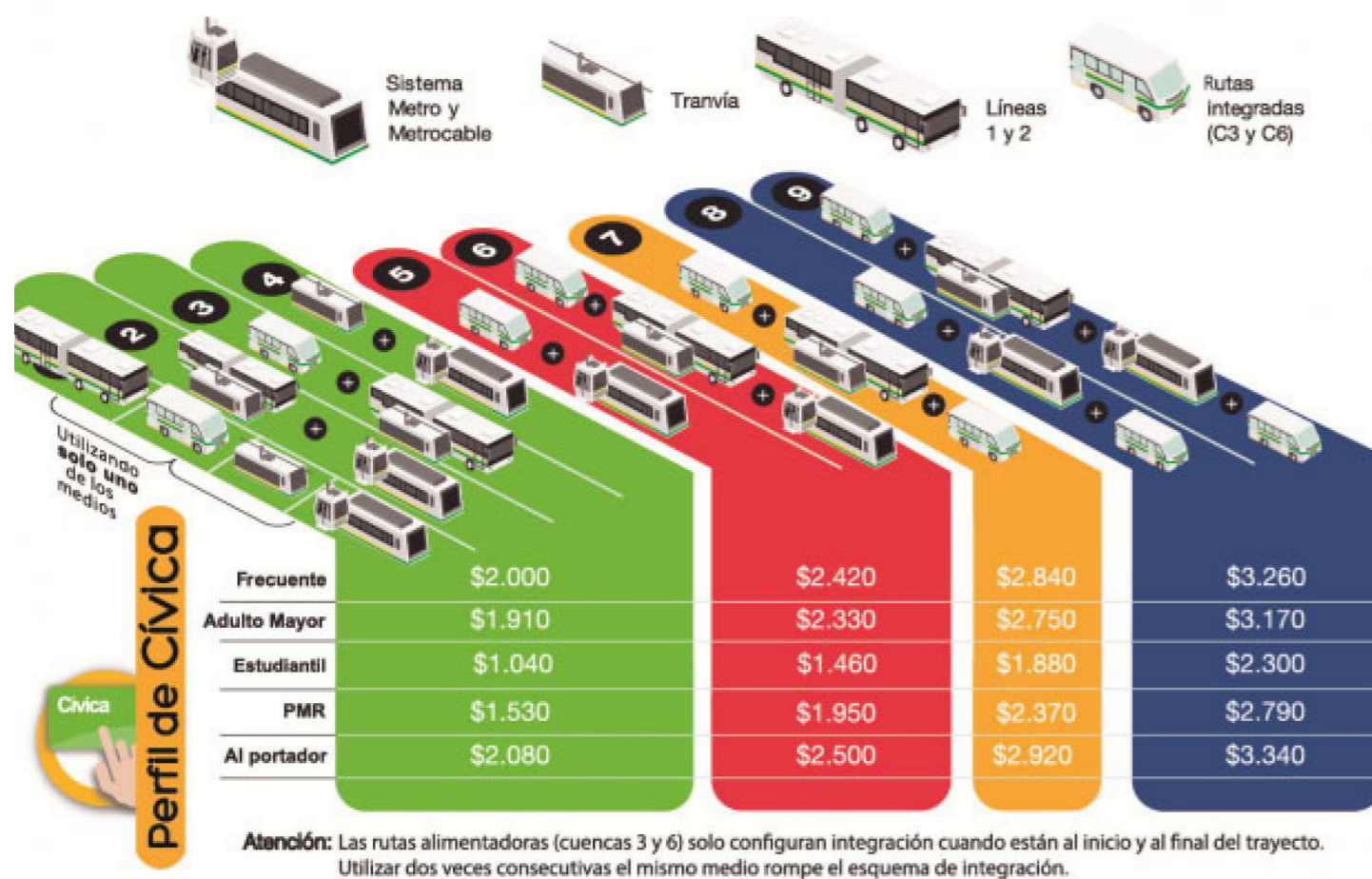


Figure 5.16: Integrated public transport and payment system in Medellin (<http://friendsofmedellin.com/en/2017/07/05/tranvia/>)

Public transport should be encouraged because it is accessible to low-income groups who cannot afford private cars. Further, convincing higher income groups to use public rather than private transport would significantly reduce the amount of cars on the road. Fewer cars means less congestion and lower carbon emissions. This is important, considering that 35% of Cape Town's carbon emissions come from the transport sector (CoCT, 2016). Therefore, an efficient, affordable, public transport system that provides a range of alternatives to private cars would help to reduce the city's contribution to climate change.

5.2.6 Environmentally sensitive and sustainable design

Cities need to enable sensitive and sustainable use and management of environmental resources, not only through their policies but also through their design. This is especially important in the context of climate change, where episodic events such as droughts and floods are becoming increasingly frequent, and weather conditions are becoming more extreme. Environmentally sensitive design should proactively prevent flooding and mitigate the effects of drought by implementing water sensitive design solutions, and it should ensure that the environmental factors of wind and sun are incorporated positively into urban design.

Water Sensitive Urban Design (WSUD)

Broadly speaking, WSUD is a design approach that focuses on incorporating water conservation and regeneration into urban developments through design interventions (Vernon & Tiwari, 2009). One WSUD intervention is permeable paving, which allows stormwater to soak into the ground and be reabsorbed into the groundwater system (see Figure 5.17). This is far better than having the water run into stormwater drains that flow straight to the sea, and which can become flooded. Permeable paving therefore helps to maintain the natural water cycle of precipitation and reabsorption. Another strategy

is water sensitive landscaping, which incorporates soft, permeable surfaces and detention ponds to store and absorb rainwater. A good example of this type of landscaping is the Merriman Square in Cape Town's Foreshore precinct (see Figure 5.18). This not only conserves water, but also provides a calm place where people can come for visual and psychological relief from the intense urban activity of the surrounding city. WSUD therefore serves both a place-making and water conservation purpose.

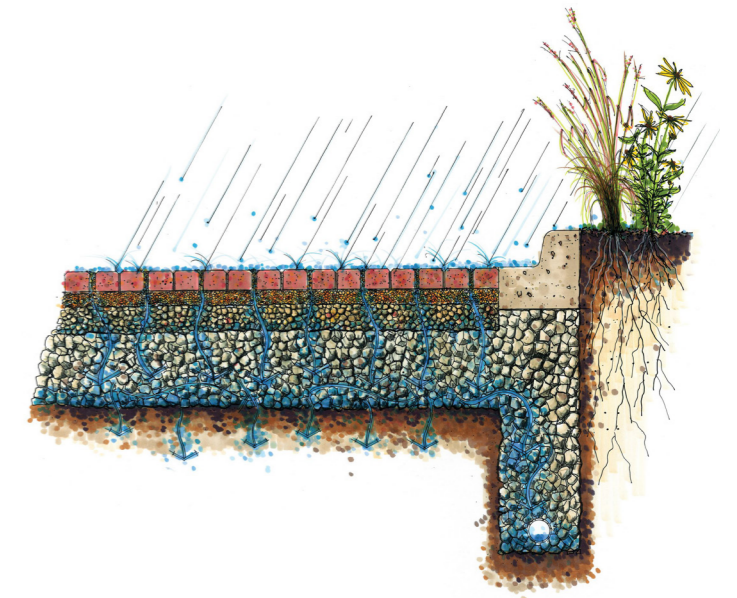


Figure 5.17: Permeable paving (http://i0.wp.com/ahbelab.files.wordpress.com/2015/07/nrcs_permeable-paving-diagram.jpg?quality=80&strip=all)



Figure 5.18: Water sensitive landscaping at Merriman Square in the Foreshore (<http://sq1.co.za/wp-content/uploads/2016/08/Feature-Image-Size-Template-PS.jpg>)

Wind protection

Strong winds can deter people from spending time outside in public spaces, but these winds can be mitigated through sound urban design. Figure 5.19 show that tall, stand-alone skyscrapers channel wind down to ground level, thus intensifying it. Closely-packed buildings of relatively consistent height, on the other hand, provide an effective shield against wind (Gehl & Gemzoe, 1996). A thick bank of trees can have a similar shielding effect. It can provide a wind-protected area that is up to ten times the height of the trees (see Figure 5.20). These wind-protection mechanisms are particularly important for the Foreshore, where winds can reach speeds of 12 knots (see section 3.2.1).

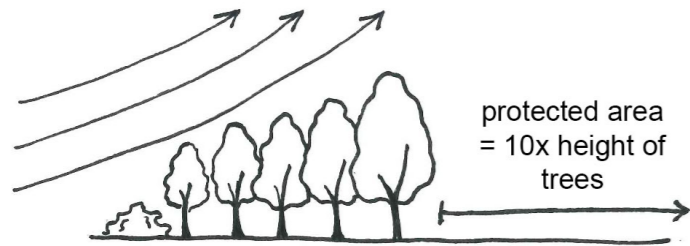


Figure 5.20: Trees provide protection against wind (Author, 2017, after CSIR, 2001)

Maximising natural light

Buildings should be positioned so that they do not block the natural light of the spaces buildings surrounding them. This could mean orienting buildings to be south of open space so that they do not cast shadow on it (see Figure 5.21). It could also mean ensuring that streets in front of tall buildings are wide enough or that the height of the building is graded by setbacks so that the angle of the sun can still reach buildings on the opposite side of the street (see Figures 5.22 and 5.23). Maximising on natural light in buildings and open spaces not only enhances the experience of the space, but also reduces the need for electric lighting. This saves money and reduces reliance on coal-powered electricity.

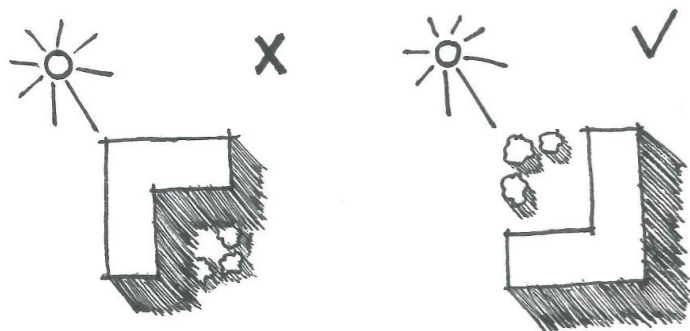


Figure 5.21: Building blocking natural light in an open space versus building oriented to allow for natural light in the open space (Author, 2017, after CSIR, 2001)

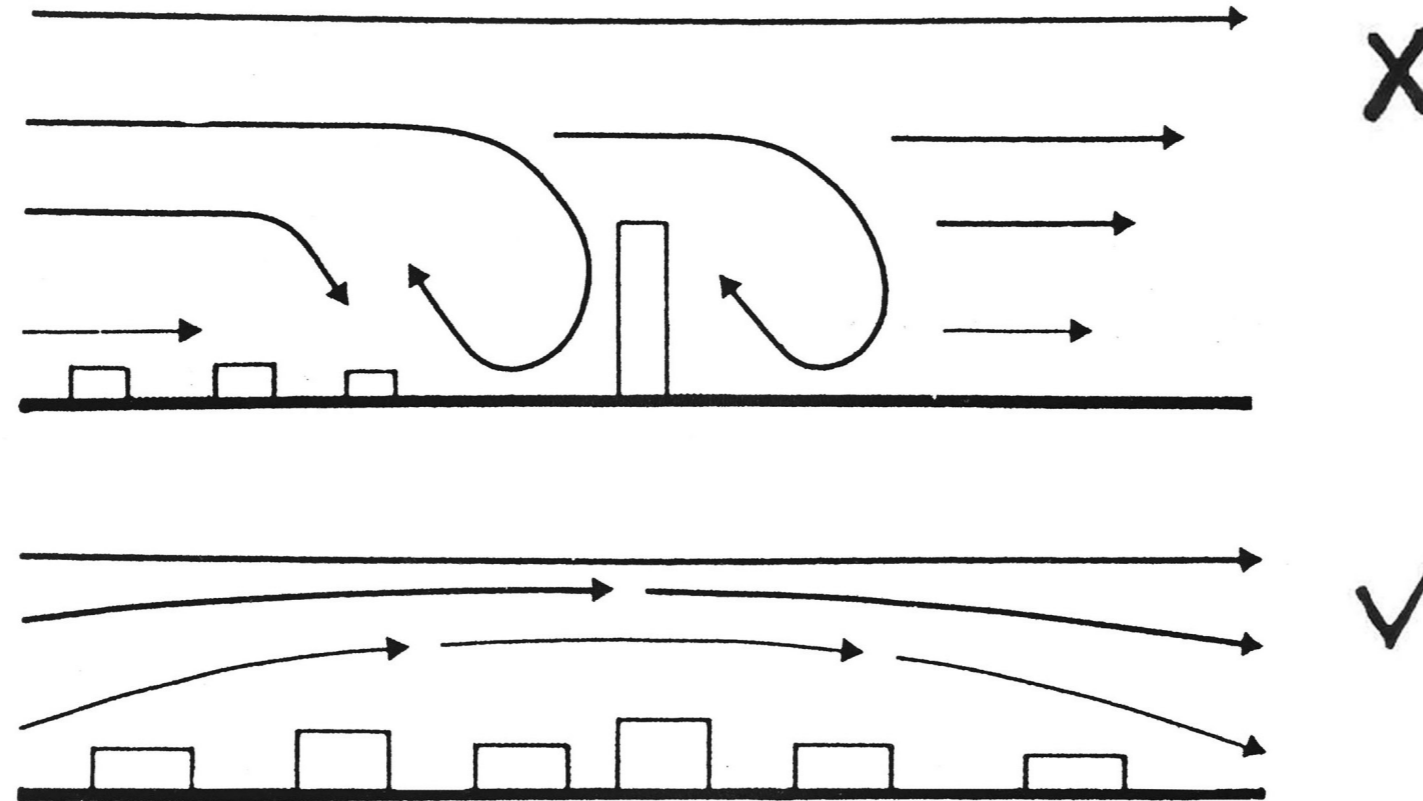


Figure 5.19: Closely-packed buildings of consistent a height provide protection against the wind (Gehl & Gemzoe, 1996)



Figure 5.22: Height setbacks of the Metropolitan building in Cape Town allow more sunlight to reach the street (Author, 2017)

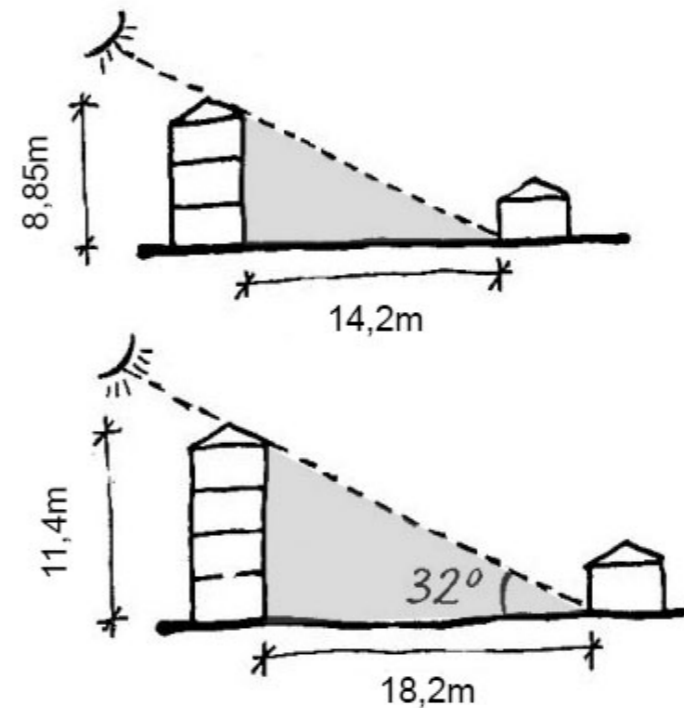


Figure 5.23: Building heights and their shade areas (CSIR, 2012, adapted slightly by author, 2017)

5.2.7 Strong and accessible connection between land and seafront

Coastal cities such as Cape Town should ensure that their waterfronts serve as a visually and physically accessible threshold between land and sea. Industrialisation, for coastal cities, meant converting their waterfronts to industrial ports that were largely closed to the public. However, many of these cities are now redeveloping their foreshores to be more accessible and appealing (Marshall, 2001). Waterfront development projects in cities such as Baltimore, San Francisco, and London have been used as catalysts for urban renewal, as they can become destination spaces that attract people and commercial investment (Millspaugh, 2001). Cape Town has redeveloped part of its harbour into the V&A Waterfront, which is now a major tourist hub and commercial node. However, this development caters to very high income groups, with luxury hotels and apartments being developed as part of the project. This creates an exclusionary rather than accessible environment (Worden, 1994; Bickford-Smith, 2009). For a waterfront to be truly accessible, therefore, it needs to be focused on people rather than profit. Promenades and piers are a good way of making a waterfront accessible to all, because they are public spaces. Good examples of these are the Green Point Promenade in Cape Town, which opens up the seafront as a recreational space (see Figure 5.25), and the piers in the bay of San Francisco, which create a walkable link between land and sea (see Figure 5.26). The urban design of these spaces should enable clear views and provide spaces to sit, as shown in Figure 5.24.

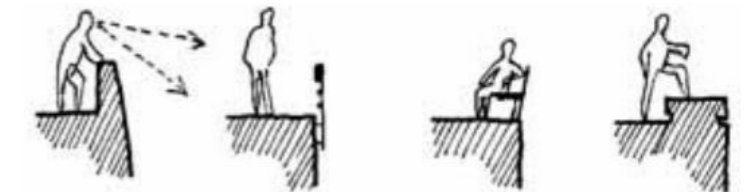


Figure 5.24: Visually permeable interfaces for scenic paths/promenades (CoNY, 2013)



Figure 5.25: Cape Town's Green Point promenade makes the coastline walkable (https://namibsands.files.wordpress.com/2009/01/04_green_point_promenade.jpg)

5.3 Conclusion: Vision for the Foreshore

These values and design criteria will help to create my vision of the Foreshore as a liveable, affordable, urban neighbourhood that is integrated socially and spatially into its surrounds. In this vision, there is a strong connection between the city and the sea, and pedestrians are the primary users of the seafront and streets. Public space is the structuring element of area's design, and it serves to ensure that the high densities of people living and working in the area have space to play and relax. Buildings serve to complement and enclose open spaces. They contain a wide range of uses, and are designed in a way that provides shelter from strong winds. The motor vehicle traffic that passes through the area is limited and consists primarily of public transport. In short, the Foreshore is home to a vibrant community of people living, working, learning, relaxing, and creating in a space that encourages and provides for all of these activities.

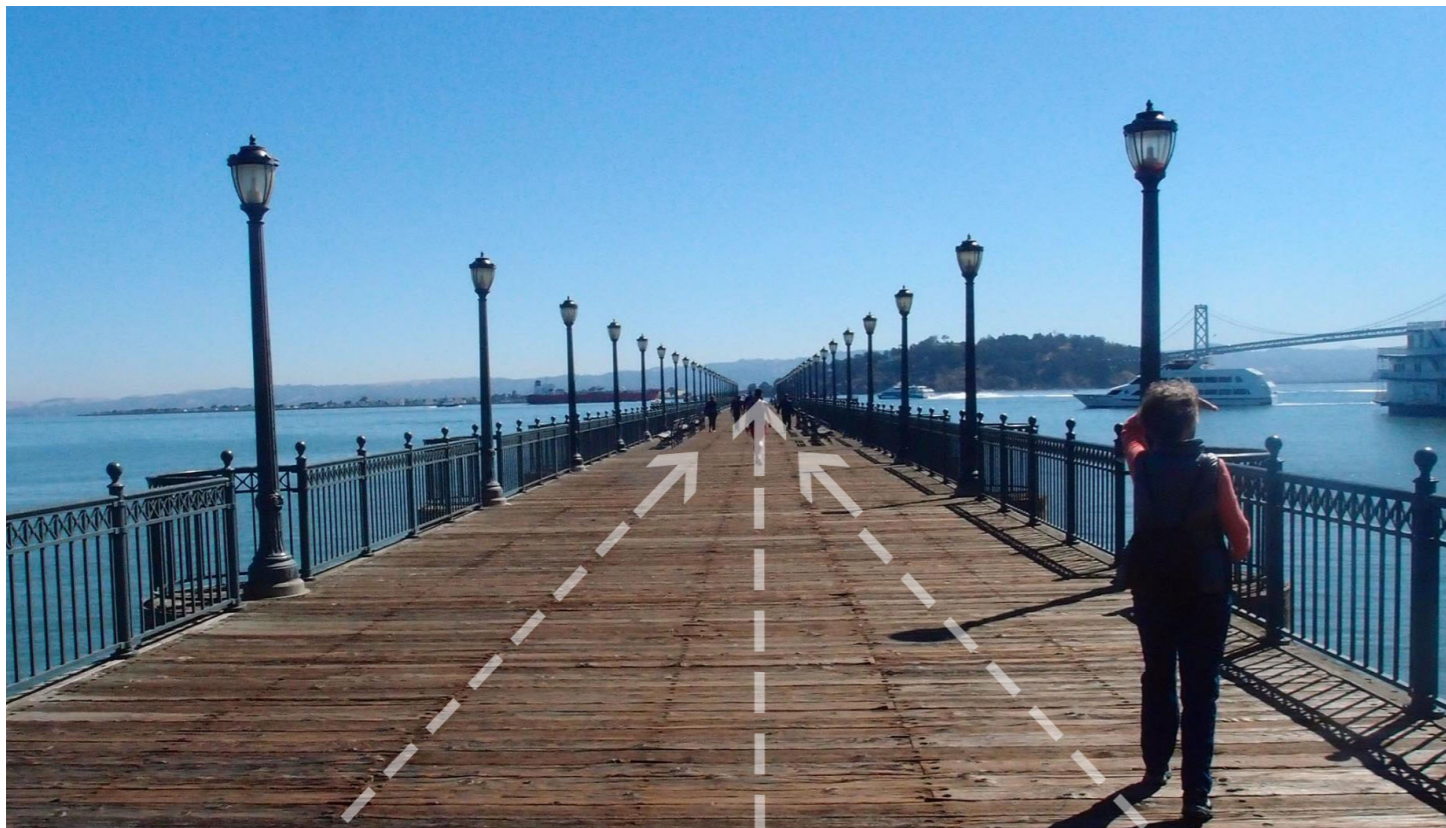


Figure 5.26: This pier in the bay of San Francisco provides a strong, walkable connection between land and sea (Author, 2016).

6. FORESHORE SPATIAL DEVELOPMENT FRAMEWORK

This section will synthesise the analyses and ideas from the previous three chapters (the contextual analysis, housing policy and market review, and spatial principles) into a spatial development framework for the Foreshore. I will use the 'package of plans' approach to structure this framework and inform the implementation of the plan in the following chapter. The package of plans approach to development consists of generating a "hierarchy of planning frameworks and related approvals that provide an increasing level of planning and design detail so as to achieve the overall vision for a development area" (Steenkamp & Winkler, 2014: 340). The aim is to bridge the gap between conceptual strategic plans, such as SDFs, and the highly detailed plans that are needed in order to actually implement a development (Wilkinson, 1994). This bridge between policy and implementation is crucial. Many of the obstacles to affordable inner-city housing provision are caused by a disconnect between progressive policy and the actual implementation of this policy (Steenkamp & Winkler, 2014). The issues pertaining to implementation will be discussed further in the following chapter, while this chapter will provide the plan that is to be implemented.

The hierarchy of the package of plans begins with a 'contextual framework' that analyses the physical and policy context of a site to ensure that the plan's objectives align with broader strategic planning goals (Steenkamp & Winkler, 2014). This contextual framework has been covered in chapters three, four, and five. The next step in the hierarchy, which will be covered in this chapter and is shown in Map 6.3, is to generate a development framework - based on the findings of the contextual framework - which stipulates the "land use and physical structure for the development site", with broad policy statements concerning "urban design, landscaping, urban conservation, traffic and transport, pedestrian access, residential development, services and subdivision" (Ibid: 341). It also specifies the division of the site into precincts, which would then form the basis of the plans for the next step in the hierarchy (see Figure 6.1), but this dissertation will not get into the level of detail that Precinct plans, Site Development Plans (SDPs), and Building Plans contain.

6.1 Concept

The core concept for this development is to provide social housing and affordable market housing in the Foreshore, together with a mix of land uses that support this. The underlying rationale for this is that everyone - regardless of their income - has

a right to the city centre, with all of the facilities and locational opportunities it provides (Lefebvre, 1967; Purcell, 2002; Simone, 2010; Fainstein, 2005). In order to enable and enhance this objective of an inclusive residential development in the Foreshore, the current structure of the site needs to be adapted. This should be done through the removal of the elevated freeways, the creation of a new road network, and the allocation of supporting land uses. This process will be illustrated in the following sections, wherein the spatial principles discussed in the previous chapter will be applied to the site to create lively, urban neighbourhoods.

6.2 Development programme

In order to spatialise proposals for a site, a development programme must first be established. This section outlines the development program for the Foreshore, including how much land will be used and an estimate of the proportion of land uses that will be provided in the site.

6.2.1 Developable Land

The first component of what is 'developable land' is environmental suitability. As Map 6.1 shows, about 85 ha of the total 91 ha of land in the Foreshore is environmentally suitable for development. However, the remaining 6 ha of land that cannot be built on - including the canal and flood risk areas - can still be used for public open space.

The second component of developability is the existing structures on the site, including physical structures such as buildings, and legal structures such as land ownership. As Map 6.2 shows, the majority of land is owned by Transnet, the parastatal company that operates South Africa's rail and port freight. The strip of land adjacent to the CBD is owned by the City, including the land that the CTICC parking garage is on. The only privately owned land is the Yacht Club, Canal Quays and Harbour Bridge apartments and hotels along the canal. The buildings on this privately owned land will be maintained in form and function, as will the cruise liner terminal building that is on long term lease to the V&A Waterfront Company. The Customs House building, which is currently used as office space for several divisions of the Western Cape government Department of Home Affairs, will also be maintained. However, it will be repurposed as a residential building as part of a strategy for creating low cost housing by using repurposed lower grade office space.

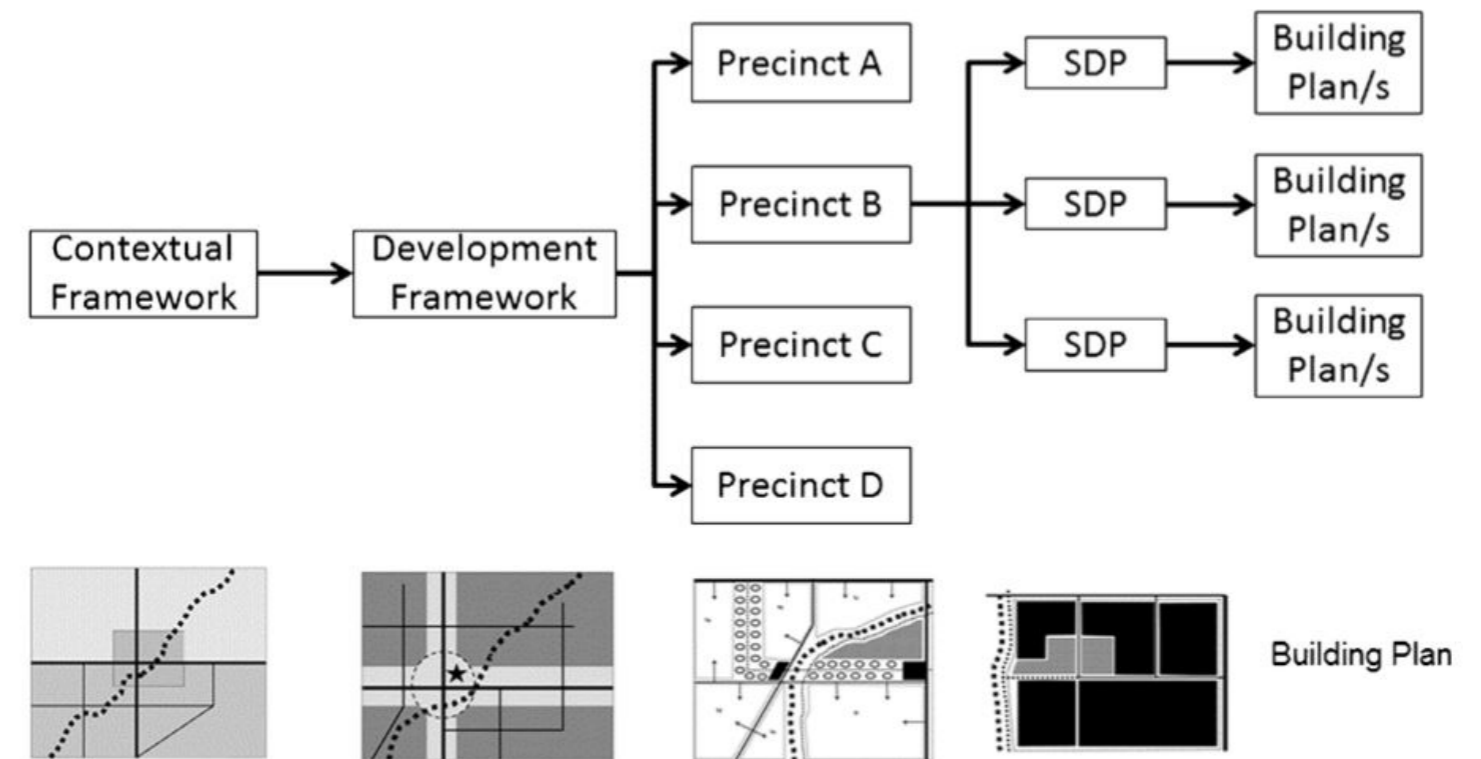


Figure 6.1: Diagram of the package of plans approach (Steenkamp & Winkler, 2014).

6.2.2 Land Use Proportions

This section breaks down the proportion of general land uses that is proposed for the Foreshore site, while the following section will elaborate on the details and spatialisation of each land use category.

Because the focus of this dissertation is developing the Foreshore to provide (affordable) housing in the city centre, the primary land use for the development is residential. This will comprise 55 ha, as shown in Table 6.1. Another key focus for the Foreshore development is making it easily accessible, and so movement routes require the second highest amount of land (14 ha). These routes will prioritise pedestrian movement, while also accommodating motorised transport. In addition to space for movement, there needs to be a substantial amount of public open space to provide balance out the high residential

density. The 9 ha of land allocated for public open space includes the 6 ha of undevelopable land along the harbour's edge and the canal, which are suitable for use as recreational green space.

The CBD already contains a high proportion of commercial space, but the new Foreshore residential areas will increase the population of the city centre significantly, which will generate a lot of purchasing power for commercial activities. Therefore, 9 ha of land will be allocated for new commercial development in the Foreshore. Likewise, there is already an abundance of public facilities in the CBD, and so the Foreshore need only allocate 4 ha to public facilities to ensure that the additional Foreshore population is catered for. The intense industrial activity of the eastern bays of the port just adjacent to the site negates the need for industrial land use in the Foreshore.

Land use	Percentage of site	Hectares
Residential	60%	55 ha
Movement	15%	14 ha
Public open space (including 6 ha of undevelopable land)	10%	9 ha
Commercial	10%	9 ha
Public facilities	5%	4 ha
Total	100%	91 ha

Table 6.1: Proposed land use distribution in the Foreshore (Author, 2017)



Map 6.1: Developable land in the Foreshore (Author, 2017)



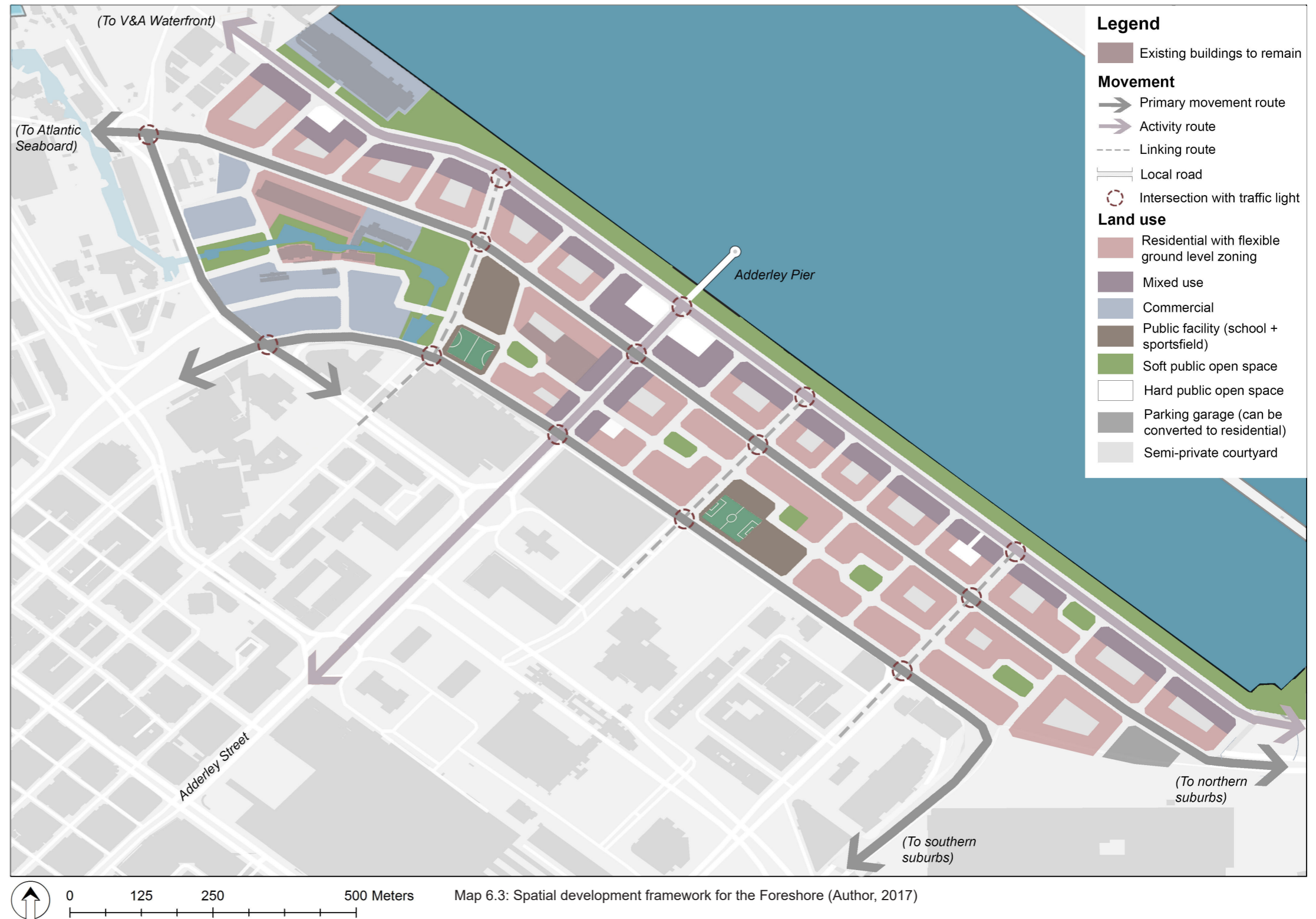
Map 6.2: Land ownership in the Foreshore, and existing buildings that are to be kept (Author, 2017)

6.3 Spatial Development Framework

This section combines the proposed distribution of land uses with the spatial principles discussed in the previous chapter to create a spatial development framework for the Foreshore. This framework, shown in Map 6.3 and contextualised in Map 6.4 on the following page, prioritises affordable housing that is incorporated into a mix of uses to create lively urban neighbourhoods. The following subsections will explain how the spatial principles and land uses will be applied to the Foreshore site to achieve this.

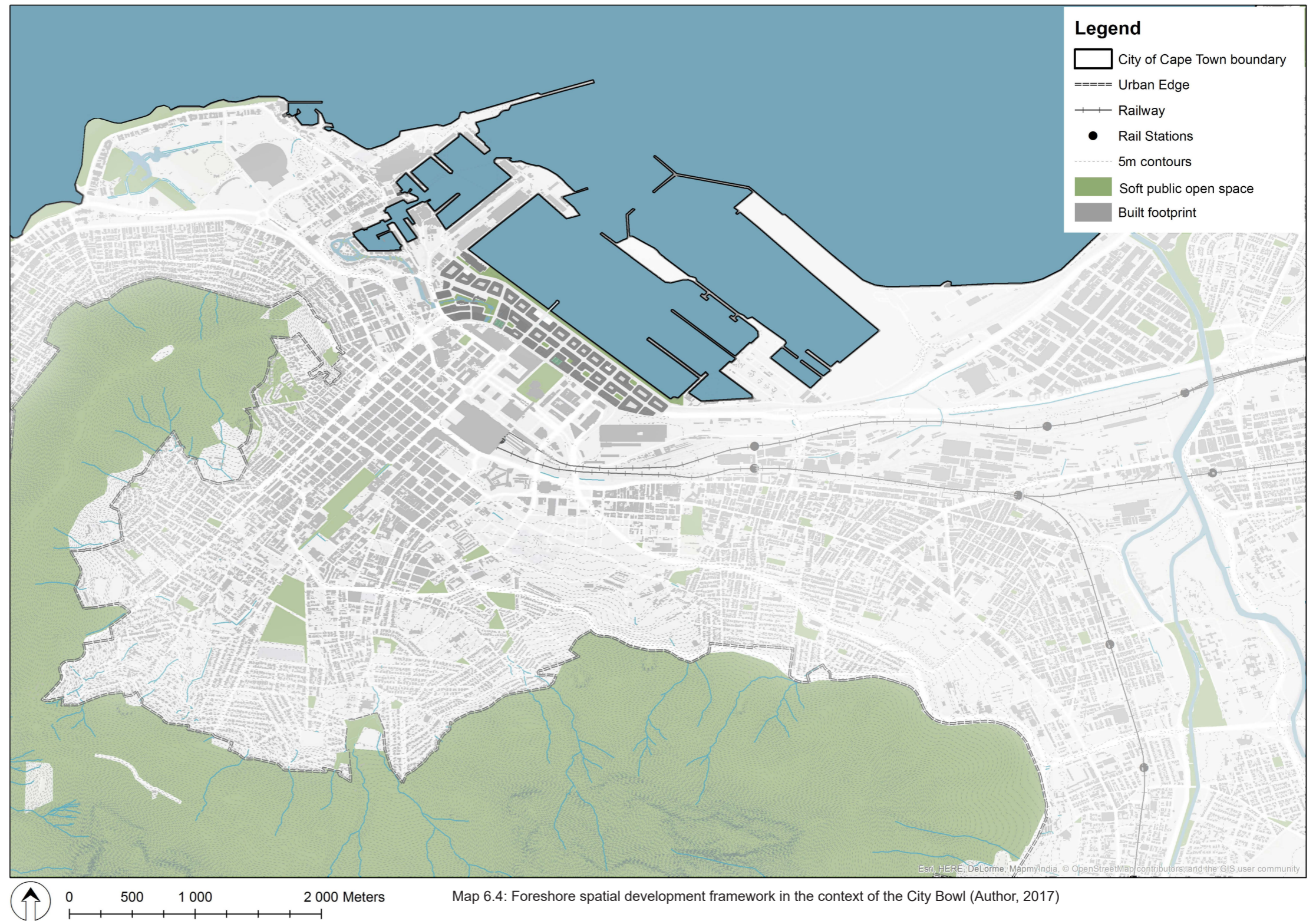
6.3.1 Spatial Structuring Elements

A grid layout has been adopted to structure the site, taking guidance from the surrounding configuration of blocks in the older part of the CBD. This enables the new Foreshore development to integrate smoothly into the existing urban grain, and the small blocks allow for pedestrian permeability and multi-directional movement. The rigid grid is altered in the residential area between the two primary routes to create a network of intimate parks and slow motorised traffic through the area. The new development is integrated with the existing structure of the Foreshore by maintaining the north-south movement routes through the site where possible. The focal point of the development is an extension of Adderley Street that leads to a reconstruction of the Adderley pier. This was an important public space prior to the land reclamation project and freeway construction. This will reinstate the connection between land and sea, and provide a strong landmark to make the site legible.



6.3.2 Built Form

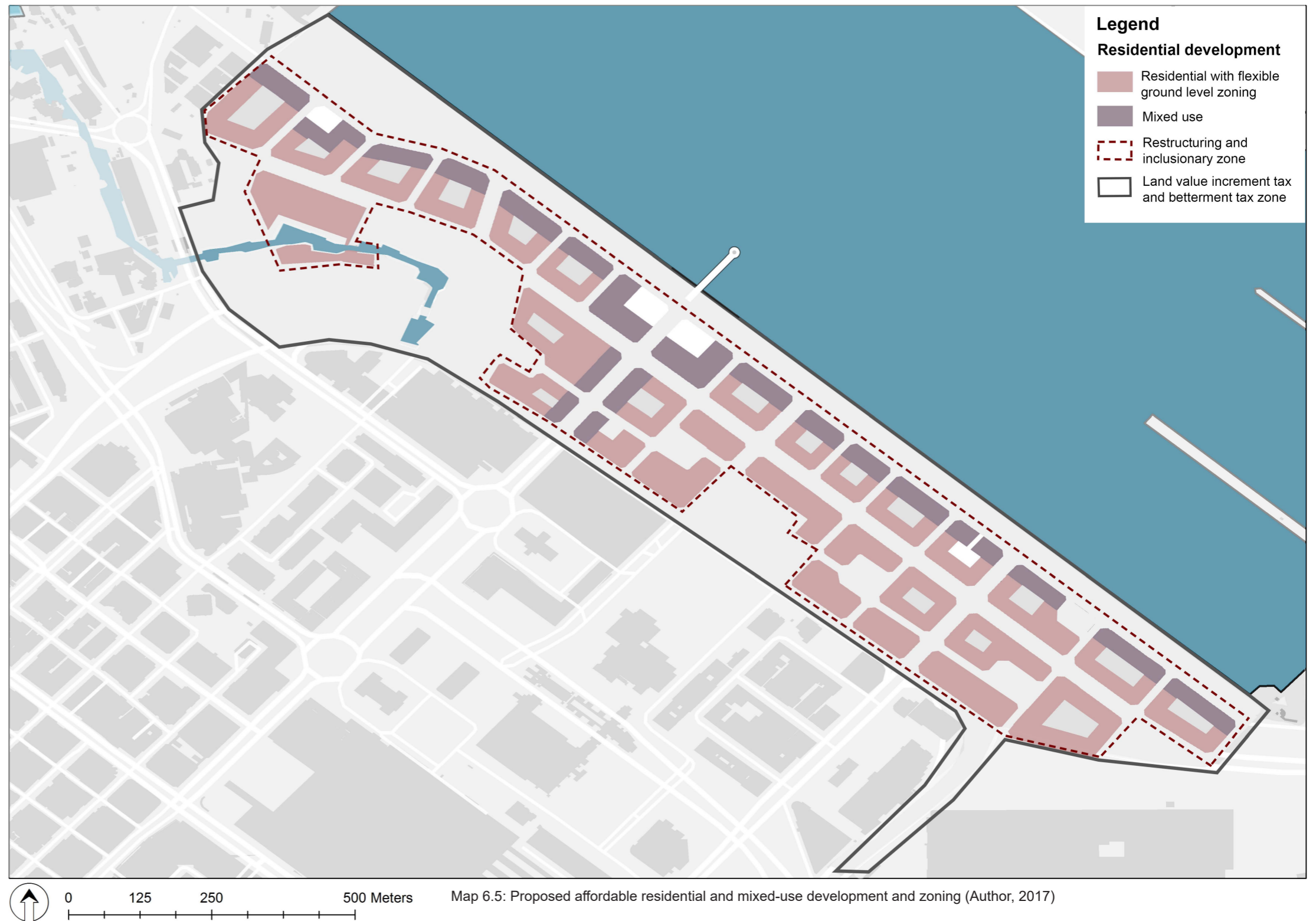
Residential and mixed-use buildings should mostly be perimeter blocks. As discussed in the previous chapter, these provide semi-private open space for the building's inhabitants, in the form of central courtyards. Buildings that are primarily commercial are not required to form perimeter blocks, and may take a tower block form so long as they conform to building height regulations. Building heights should be graded, starting at about five storeys along the harbour's edge, and getting gradually taller towards the CBD side of the site but not exceeding 10 storeys. The Customs House building is the only exemption from this rule, as it is already sixteen storeys high. The buildings to be constructed around it on the same block should be ten storeys so as to integrate this tall building into its lower-rise surroundings. This general gradation of building heights from the shortest in the front/north to the taller buildings in the back/south end of the site will ensure that the front buildings do not obstruct the view and light of the buildings behind them.



6.3.3 Residential and Mixed-Use Development

Residential development should take a compact, urban form, with a high gross density of 100 dwelling units per hectare (du/ha), as described in the previous chapter. This means that a total of 8500 new dwelling units will be created in the Foreshore, given that the total developable land in the site is 85 ha. If the average household size is taken to be 2.5 members, this would result in an additional population of 21 250 people in the Foreshore. Most of the residential development should follow the structure of perimeter blocks with central courtyards, except where the city blocks are irregular shapes or too small, in which case row housing or tower block forms may be used. The tower-block style Customs House building will be repurposed from C-grade office space to residential apartments. This will decrease the cost of development, which will enable the units to be more affordable than new-build structures. The mixed use areas will consist of some floors of commercial use (such as retail, entertainment, and small-scale offices) which are incorporated into a primarily residential building. This combination of activities will help to extend the space's period of activity, thus enhancing its safety.

Zoning strategies will be discussed in more detail in section 7.3.3 (the following chapter's 'key projects and strategies' section), but some key zones are represented in Map 6.5. All residential buildings should include a flexible zoning for the ground floor that enables it to be used for small-scale commercial activities such as shops, cafes, offices, and studios. Residential and mixed-use blocks should also be made a Restructuring Zone (to enable the implementation of social housing), and an Inclusionary Zone (to incentivise private sector development of affordable housing). In addition to this, the Foreshore site as a whole should be made a land value increment tax and betterment tax zone. Broadly speaking, these tax zones require private developers to contribute towards government's provision of infrastructure and planning rights to the site.



6.3.4 Movement

The current movement system in the Foreshore is constrained by the elevated freeways. These act as barriers to the site and which funnel traffic into a few congested access/exit points. This plan proposes that these freeways should be removed, and be replaced with a hierarchy of ground level roads that accommodate different volumes, speeds and modes of transport. It is often assumed that normalising freeways will increase traffic congestion. However, numerous freeway removal projects around the world prove that this is not true (see section 7.3.1). In fact, replacing freeways with a ground-level, gridded street network has been found to significantly *reduce* congestion. The reasoning for this will be discussed in more detail in section 7.3.1, but it is crucial to make this point clear from the start.

The movement routes that are to replace the freeway are shown in Map 6.6, and each is discussed in more detail on the following page. The dimensions of each street has been determined using Behrens & Watson's (2014 [1996]) guidelines for road reserve elements.



Primary movement routes

The elevated freeways of Nelson Mandela Boulevard and FW de Klerk Boulevard should be removed, and be replaced with ground-level, medium speed roads. These will form the primary movement routes through the site, and will take over the role that the freeways served in connecting the CBD to the southern and northern suburbs, as well as to the V&A Waterfront and Atlantic Seaboard. The primary roads will have four lanes of vehicle traffic (two going each direction). However, it is also important that these roads are not exclusively for cars, and so they will be lined with cycle lanes and pedestrian space (see Figure 6.2).

Traffic light intersections will only occur where primary, activity, and connector routes intersect, which will enable a smooth flow of traffic. However, the local roads will end in stop streets without traffic lights where they connect with the primary and activity routes. This will ensure that the interior of the Foreshore remains permeable to traffic without causing congestion on the main roads.

Activity routes

The activity routes aim to connect the Foreshore to the CBD and the water's edge. This will include movement that is centred on pedestrians and NMT, but which still accommodates medium speed traffic. Activity routes will also have four lanes of vehicle traffic (two in each direction), but these lanes will be slightly narrower than those of the primary routes. There will also be parallel parking strips between the moving traffic and the cycle lanes (see Figure 6.3). The narrower lane width and adjacent parking will help to slow traffic speeds, thus making the street more suited to pedestrian presence and activity along the wide pavements.

Linking routes

These are north-south connections linking the Foreshore to the surrounding CBD via extensions of existing roads into the site. They have the same structure as activity routes, but are lined with residential space or public facilities rather than mixed-use spaces.

Local roads

The local roads are mainly for use by people living or working in the Foreshore. They will consist of a network of two lane streets laid out in a grid that fits between the primary, activity and linking routes. These roads will include a parallel parking strip and sizeable pavement on each side, as shown in Figure 6.4.

Public transport and Non-Motorised Transport (NMT)

Public transport and NMT will be encouraged as the main modes of movement in the Foreshore. The MyCiti and Golden Arrow buses and minibus taxi services will be extended into the Foreshore along the primary movement and activity routes. These services will connect the Foreshore to the Northern and Southern suburbs, the Atlantic Seaboard, and the rest of the CBD, including the Cape Town central train station. Non-motorised transport will be provided for through the designated cycle lanes and wide pedestrian pavements along all main roads.

As suggested by Proposal A of the Foreshore development proposals, there will be a park-and-ride facility implemented at the Durbanville MyCiti station. This will encourage more commuters to use public transport to enter the city centre itself, even if they use private transport for the first part of their journey. This will go towards reducing the amount of congestion into and out of the City Bowl in general, and the Foreshore in particular.

Parking

There will be limited parking in the residential areas, consisting mainly of the on-street bays shown in Figures 6.3 and 6.4. The public transport networks and central location of the site negate the need for private vehicles. Further, the fact that most residents will be earning below R15 000pm means that car ownership will be lower than in wealthier areas. Therefore, the off-street parking requirement of 1.75 bays per apartment dwelling unit will be removed for the Foreshore residential areas. The more commercial areas will be allowed to have more off-street parking than residential areas, but this will still be kept below the City's current parking requirement of 4 bays per 100 square metres of office space (CoCT, 2012 d). As with the residential areas, public transport and NMT will be encouraged as the main modes of transport into the area.

There will be one parking garage in the eastern end of the site (see Map 6.6). This will serve as a secondary park-and-ride facility to encourage commuters to use public transport or NMT once they enter the CBD and Foreshore. This parking garage should be designed in such a way that it can later be retrofitted to become residential or commercial space. This will make it adaptable to a future where private cars are no longer a viable means of transport due to dwindling fossil fuel supplies.

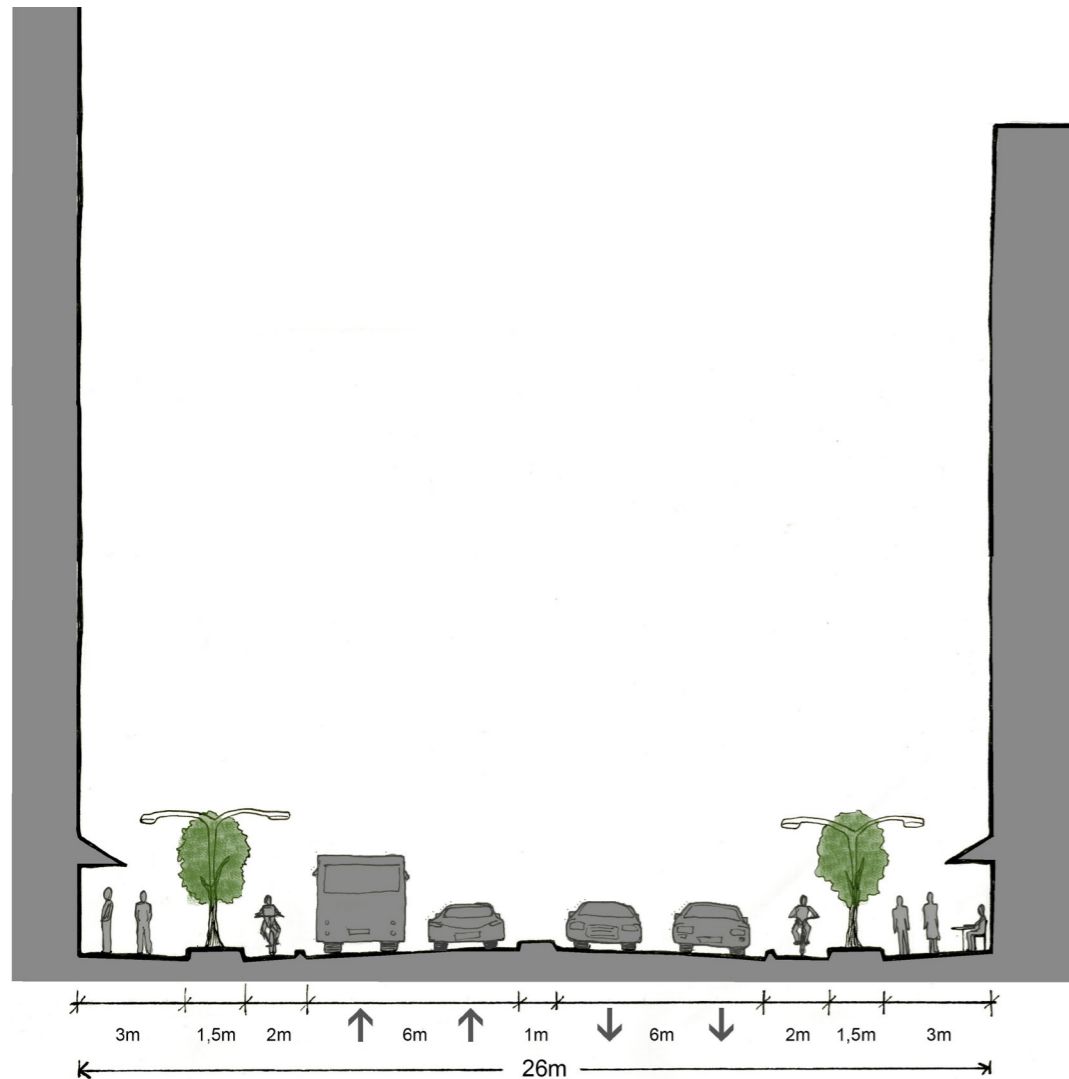


Figure 6.2: Street section of primary movement route (Author, 2017)

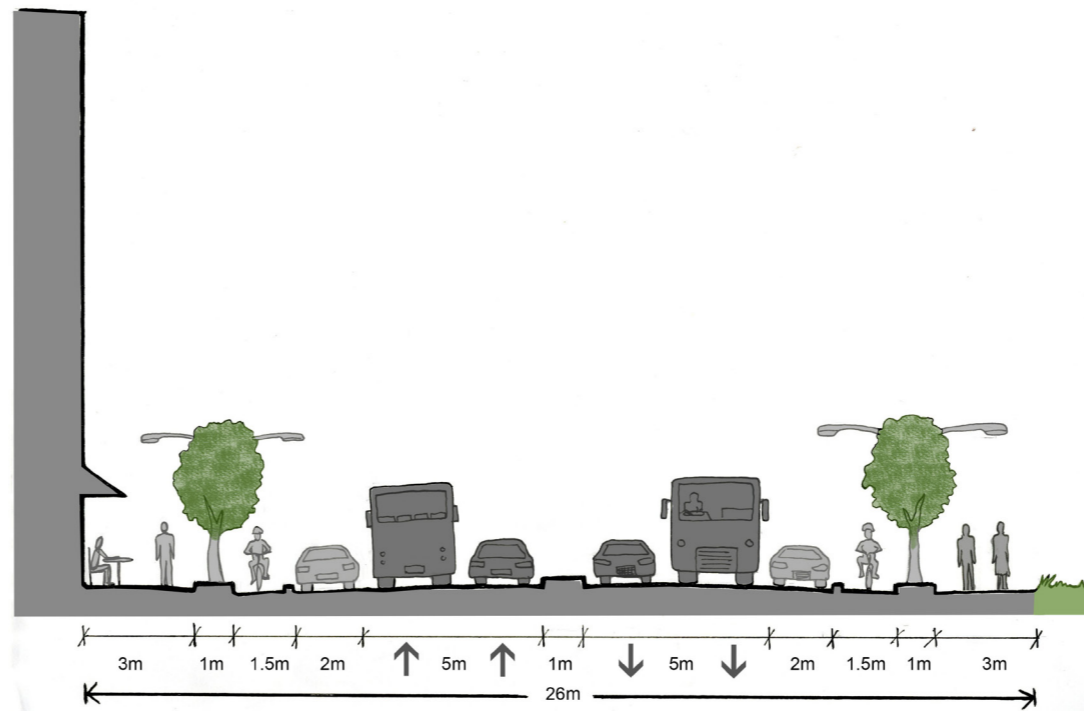


Figure 6.3: Street section of activity route (Author, 2017)

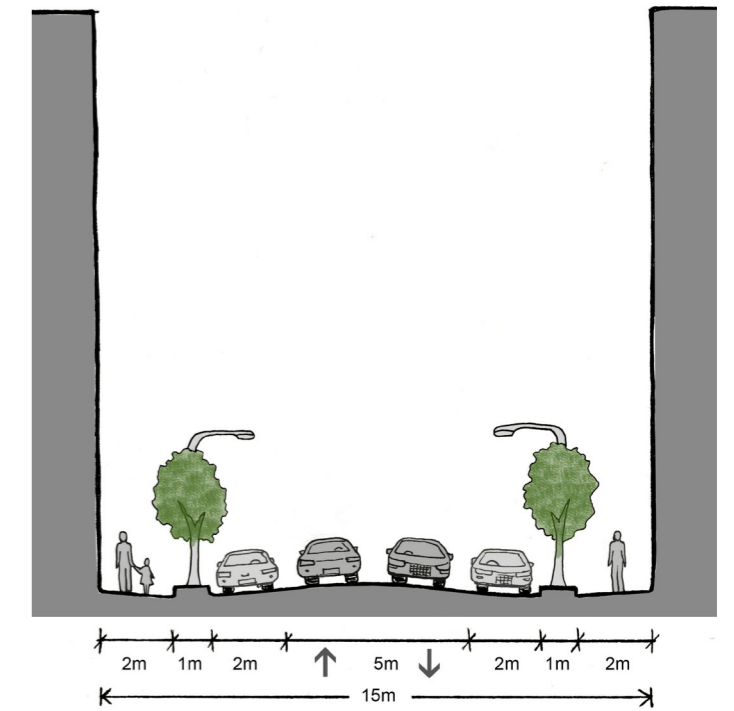


Figure 6.4: Street section of local road (Author, 2017)

6.3.5 Public Facilities and Public Open Space

The additional population of roughly 21 250 people to be accommodated in the residential areas will require educational, medical, and recreational public facilities. As discussed in the submetropolitan contextual analysis in Chapter 3, the broader City Bowl is well provided for in terms of public facilities. These include multiple hospitals, schools, FET colleges, museums, and libraries. The additional population implicated in the Foreshore development can make use of these, which reduces the need to provide more facilities within the Foreshore site itself. Table 2 shows which facilities and how many of each will be provided within the Foreshore to cater to the additional population, and Map 6.7 shows their spatial distribution. These are mainly schools, crèches, and recreational facilities, as the facilities in the CBD can fulfil the medical and higher-education needs of the Foreshore residents.

The City Bowl is somewhat lacking in recreational space in the form of parks and sports facilities. Therefore, the Foreshore development will provide 9 ha of hard and soft public open space, including two sports fields, parks, squares, a promenade, and a pier. These facilities will be connected to schools, as recommended by CSIR (2001), and will serve the recreational space needs of the broader CBD population. This network of public open spaces will help to create accessible connections between the city and the sea. Further, the historical Adderley pier will be recreated to reinstate the strong axis between the CBD and the harbour.

6.3.4 Commercial Development

The primary commercial areas in the site (see Map 6.3) will consist of offices, hotels, and some retail. These areas are situated around existing commercial activity in the site, including the cruise liner terminal, Harbour Bridge hotel, and the CTICC and Westin Hotel adjacent to the Foreshore. Most of the existing buildings to be maintained are in this area.

The commercial areas also fall within the land value increment tax and betterment tax zones shown in Map 4. Therefore, development in these areas will be made to contribute taxes towards paying for the government infrastructure and planning provisions that enable them to realise more value or their property.



Public facility	Population threshold range	No. / area of facilities to be provided in Foreshore
Crèche	1 per 2400 - 3500 people	2
Primary school	1 per 2200 - 4399 people	2
Secondary school	1 per 4000 - 5999 people	2
Sports facility	2 playing fields per 15 000 people	2 playing fields
Park	Max. 0.4ha per 1000 people	9ha (= 0.4 ha per 1000 people)

Table 6.2: Public facilities and open space to be provided in the Foreshore (Author, 2017, using CSIR socialfacilityprovisiontoolkit.co.za)

6.4 Division of Precincts

As per the Package of Plans approach, the development framework outlined in the previous section is divided into different precincts (shown in Map 6.8). These would each receive a precinct layout plan. Three precincts are identified in the Foreshore development, according to broad common characteristics in terms of land use, spatial form, and intended users.

Precinct 1: Mixed use

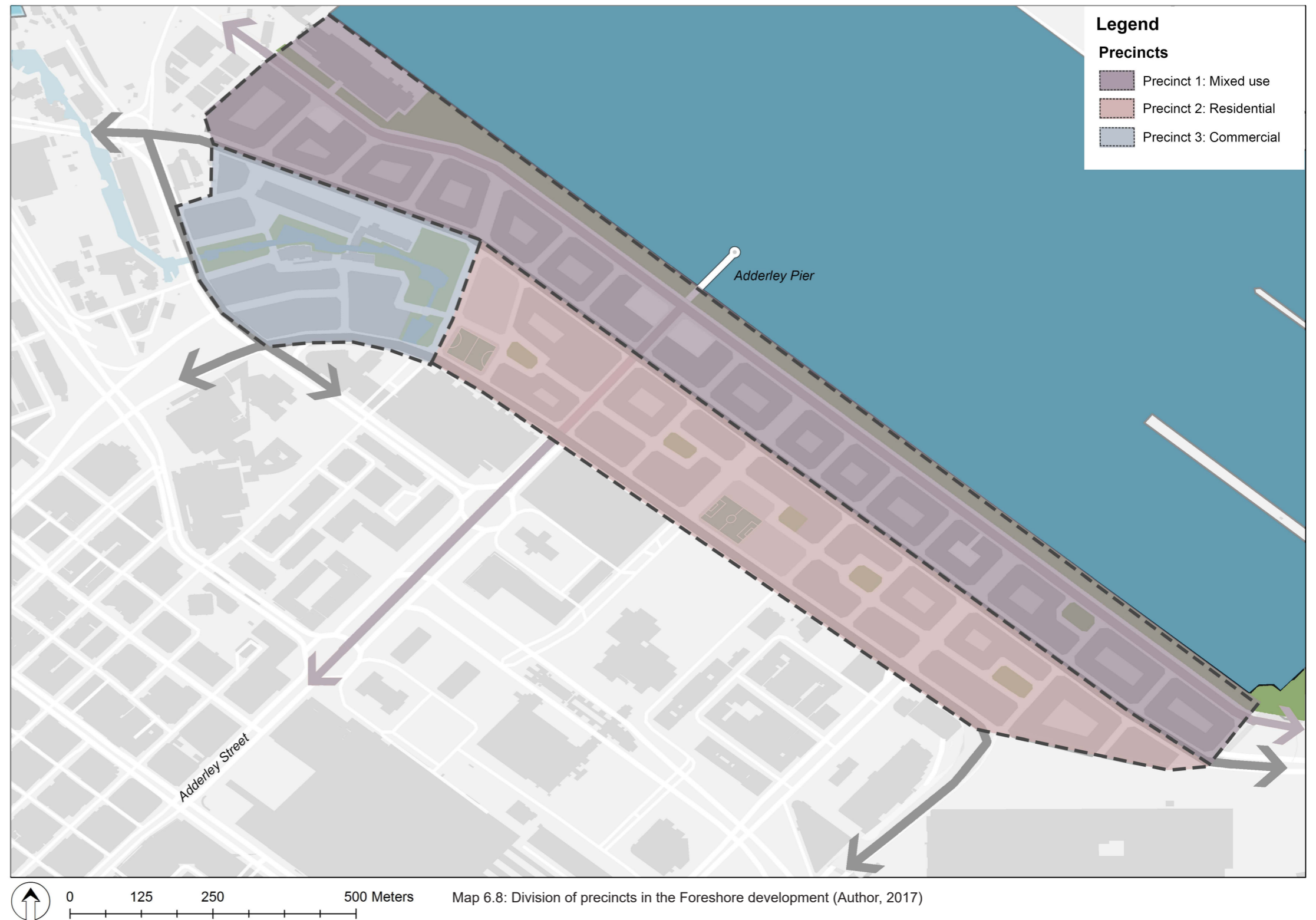
This precinct is the most diverse and multifunctional of the precincts. It takes the form of an active high street similar to Sea Point and Green Point main roads. Here, residential and commercial buildings are combined, public open space is abundant, and the recreational promenade is a defining feature of the space. This precinct includes several public squares that can be used for markets, restaurant/cafe spill-over, and informal trade. The promenade and Adderley pier provide an expanse of soft and hard recreational space. This precinct includes perimeter blocks of about five to seven storeys, which contain both residential and commercial space. The market for units in these mixed-use buildings are smaller households such as young professionals and students, and local businesses looking for small-scale storefronts or offices to let. Housing in this precinct should be approximately 50% social housing, and 50% affordable private units. The following chapter on Implementation will discuss some of the regulatory processes that will ensure that these private units remain affordable to low income groups.

Precinct 2: Residential

This is primarily a residential area that is intended for families with school-going children, because it contains both schools and sports fields, as well as several small parks. These families should mainly be low income households who qualify for social housing, and so there should be a higher proportion of social housing units (65%) than private units (35%).

Precinct 3: Commercial

This precinct is primarily a commercial area, as it contains most of the existing commercial buildings to be kept. It will contain offices, hotels, retail, and some private housing units. In keeping with the functions of the existing buildings, the precinct will mainly be used for offices and hotels, but there are two existing luxury apartment buildings in the area.



6.5 Conclusion

This chapter used the package of plans approach to outline the spatial development framework for the Foreshore. This framework prioritised the provision of affordable housing, and laid out a variety of supporting land uses that would facilitate and support this. A key component of this plan is balancing public open space with a high density built form. The affordable housing within this built form enables socio-economic integration, while the public

open space reconnects people to the environment, and the city to the sea. Replacing the freeways with ground-level roads makes the Foreshore permeable to pedestrians, and more accessible in general. This, in turn, opens up the site to the surrounding opportunities and choices located in the City Bowl.

Together, these features enable life and activity to

take place in the Foreshore, which is currently a dead zone. The plan's sensitivity to environmental elements and threats ensures that this life can continue to flourish into future generations.

The following chapter will explain in more detail some of the key projects in this development, and will discuss how the framework should be implemented.

7. IMPLEMENTATION

This chapter explores some of the current issues with the implementation of developments in Cape Town. It also generates strategies for overcoming these to enable the phased implementation of the Foreshore development framework outlined in the previous chapter. In order to develop sound strategies for implementing social housing and market affordable housing, two experts in the field of social housing and land economics were consulted. They are Malcolm McCarthy (general manager of the National Association of Social Housing Organisations [NASHO]), and Robert McGaffin (lecturer in construction economics and management at the University of Cape Town). The first section explains the difficulty of implementing socially just developments in a profit-driven land market. It looks at how the package of plans approach can be adapted to enable effective negotiation of these market forces. The second section then broadly outlines the process of getting from a conceptual plan to the point where construction can begin. The key strategies and projects are discussed in section three, and these are then laid out in a phased implementation framework in section four. The estimated implementation timeframe for the project is 20 years, although the inhabitants are set to move in from year 15. Some ongoing operational strategies that extend beyond this timeframe are also discussed.

7.1 The challenge of implementing socially just developments in a profit-driven land market

The implementation phase of urban developments is a contested space, where different and often conflicting agendas play out. In simplistic terms, the two main agendas that conflict are “planners who act as agents of the state bureaucracies, claiming to act in the ‘public interest’, and those who are agents of private capital, responsible ultimately to the bottom line of profitability” (Marks & Bezzoli, 2001: 32). Although the public sector determines the regulatory policies and broad spatial plans for development, the actual implementation of developments in Cape Town is largely driven by private, for-profit developers (Marks & Bezzoli, 2001; Napier, 2007; Steenkamp & Winkler, 2014). Their objective of maximising property values means that land uses that are not financially profitable, but which have high value in terms of socio-economic justice (such as affordable housing) are unappealing to the private sector (Tshangana et al., 2011). This is not to say that private developers are necessarily against the idea of affordable housing; they just

have to be sure that they can increase the value of a property enough to sell or rent it for more than it cost to develop it (McGaffin, interview, 2017). Certain development requirements and processes, such as professional fees, loan repayments, and land mean that the costs of developing are high - especially in areas such as the city centre, where land is most expensive (McGaffin, interview, 2017). This means that the development products need to be sold at high values to allow developers to break even, which results in the exclusionary property market Cape Town experiences.

This dissertation acknowledges that, in the interest of feasibility and diversity, the development of the Foreshore should not consist entirely of state-provided affordable housing. The involvement of private sector developers is inevitable and has the potential to be mutually beneficial for both public and private interests. However, it is government’s responsibility - and indeed their mandate - to ensure that interactions between public and private sectors result in developments that further the interest of social justice rather than individual gain. Therefore, in order to counter the socio-economically exclusionary land market, there is a need for government intervention in two broad areas:

1. Use state-owned land in well located areas such as the Foreshore to provide government-subsidised affordable housing;
2. Partner with private developers to negotiate ways to make development affordable for both developers and renters/buyers.

The former strategy is a primary focus of this dissertation, but the latter will also be discussed here through implementation strategies that enable private sector involvement in the provision of affordable housing in the Foreshore.

7.1.1 The Package of Plans process in this context

These conflicting perspectives play out in the package of plans process of negotiations between municipal government and private developers. One of the main conflicts arises over the developers’ “need for flexibility and speedy decision-making and city officials’ needs for certainty and compliance with legal requirements. (Steenkamp & Winkler, 2014: 346). In order to overcome this conflict and enable development to take place, one or both parties must make trade-offs. These trade-offs tend to favour developers. Land use legislation puts the onus on the City to find reasons to object to a development, rather than on developers to prove that the development is necessary and compliant with the MSDP (Steenkamp & Winkler, 2014). Further, the “criteria for determining desirability are not defined in the LUPO, leaving this important element of land use application assessment open to interpretation” (Steenkamp & Winkler, 2014: 345). This undermines the ability of City planners to leverage their agenda of ensuring that development aligns with MSDP objectives, as they are compelled to accept any and all development proposals.

The City’s leverage is further reduced by the fact that “infrastructure for large-scale developments is largely provided for by the private sector in lieu of development contributions” (Steenkamp & Winkler, 2014: 347). Developers then use this to negotiate alterations to the agreed plan that will enable them to maximise their profits. This lack of leverage over private, for-profit developers is especially detrimental if city officials are trying to negotiate non-profit land uses such as state-subsidised housing.

Therefore, in order for the package of plans process to be effective in producing socially just developments, the City needs to have “a significant stake to bring into the negotiation process” with private developers (Wilkinson, 1994: 26). In the case of the Foreshore, this ‘stake’ is the fact that the majority of the land currently has no private development rights, and only the City has the power to grant these rights. In short, development cannot happen unless the City agrees to grant the appropriate development rights. City officials should use this as leverage in the package of plans negotiation process with private developers to ensure that the development outcome includes both social housing and private sector-provided affordable housing.

7.2 The process of getting from plan to construction

Following the package of plans process, the development framework, precinct plans, site development plans, and building plans would be generated by private developers through a series of negotiations with the City. This dissertation suggests that Social Housing Institutions (SHIs) be included in the process of developing and negotiating these plans in order to prioritise social housing. These negotiations would cover the elements of the development process that is outlined in Figure 7.1. It must be noted that this is a simplified representation of a complex and often lengthy process, and the steps may differ in order or overlap. Once these steps have been completed, construction of the key projects and other elements of the development may begin. These will be discussed in the following section.

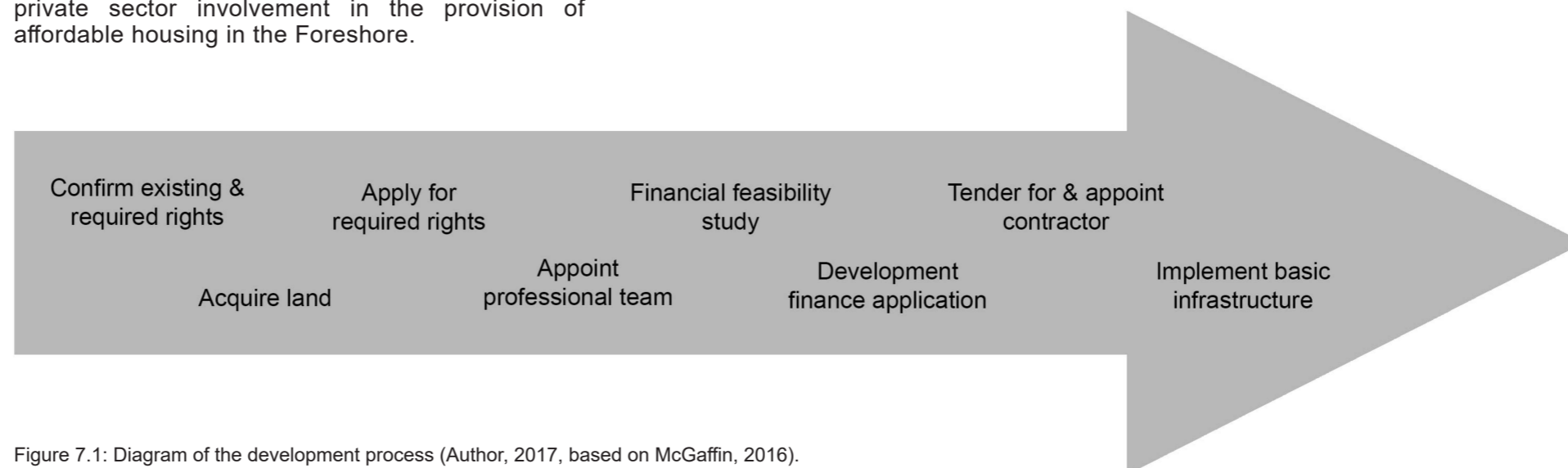


Figure 7.1: Diagram of the development process (Author, 2017, based on McGaffin, 2016).

7.3 Key Projects & Strategies

This section outlines some of the projects and strategies that are crucial to implementation of the development framework described in the previous chapter. Strategies are targeted at the pre-construction phase of the development, while projects are spatial interventions to be implemented.

7.3.1 Removal of freeways to reduce congestion

The removal of the elevated freeways is crucial for unlocking more developable land in the Foreshore and increasing the permeability of the site. However, the replacement roads would still need to be able to accommodate the high volumes of traffic into and out of the city.

There are many examples of successful urban freeway removal projects in cities such as Seoul, Portland, Vancouver, and San Francisco. These case studies unanimously show that removing elevated freeways in fact *reduces* traffic congestion. San Francisco is a good example of this, and its freeway removal project also catalysed urban regeneration, and enabled the provision of quality public open space (CNU, 2015). As was the case with Cape Town's Foreshore freeways, the elevated, double-decker Central/Embarcadero freeway that snaked around the eastern coastline of San Francisco's bay was part of the 1950s/1960s modernist fixation with accommodating free-flowing motor vehicle traffic (CNU, 2015). The urban freeways constructed during this period cut through the urban fabric of San Francisco, creating visual, physical and noise barriers between areas, and completely disregarding the fundamental function of streets as spaces for social and commercial interactions (CNU, 2015). Residents of the city largely resented the construction of these obtrusive freeways, and so when the Embarcadero section of the Central Freeway was seriously damaged in the 1989 Loma Prieta earthquake, they petitioned to have it removed and replaced with a ground-level boulevard (SUMP, 2008). This was eventually achieved, and as Figure 7.2 shows, the freeway was replaced with a wide boulevard containing multiple modes of public, private, and non-motorised transport. These boulevards, together with the additional developable land unlocked by removing the freeways, improved the safety and vibrancy of the area and increased the land values of surrounding areas (CNU, 2015). Further, despite predictions that the removal of the freeway would escalate already high traffic congestion in the city, "in the case of the Embarcadero, traffic actually improved without the

freeway" (CNU, 2015: 10). The number of vehicles travelling on the Embarcadero per day **dropped from 60 000 to 26 000** as commuters found alternative transport routes or modes to move through the city, and approximately 6000 new housing units were constructed on the land that was freed up by the removal of the freeway (SUMP, 2008).

The Embarcadero freeway removal therefore provides useful lessons that can be applied in the Foreshore freeway removal, including the following:

- Replacing elevated freeways with ground level grid of streets actually *reduces* congestion by "dispersing traffic over a variety of routes, so there are many ways in and out of the city", rather than by funnelling traffic into two or three access/exit points (CNU, 2015: 15).
- The roads that replace the freeways should accommodate multiple modes of transport, with special attention to NMT.
- Multiway boulevards can be used to accommodate the high volumes of motorised traffic needing to enter a city without compromising NMT movement and street life (CNU, 2015).
- Freeway removal has a positive "catalytic effect" for surrounding areas, especially if it is part of broader strategy for "enhanced quality of life, sustainability and economic development that leverages the opportunities made available by removal" (SUMP, 2008).

Therefore, removing the Foreshore freeways would reduce traffic congestion, provided the project followed the lessons/ guidelines set out above.

7.3.2 Consolidation of Transnet container shipping operations in the north-east basin

It is crucial that all container-shipping operations that are currently located in the Foreshore harbour be relocated to the adjacent north-east basin, where the expanded container yard is proposed to be in Transnet's Port Expansion Plan for 2016-2045. This would free up the entire plot of land between the freeways and the harbour (except for the cruise liner terminal in the western corner). This would in turn make the water's edge truly accessible, and fulfil the objective of reconnecting the city to the sea.



Figure 7.2: San Francisco Embarcadero before and after the removal of the elevated freeways. (http://media.bizj.us/view/img/4024951/embarcaderooverviewslidertease*1200xx1761-991-0-163.jpg)



Figure 7.3: View of normalised San Francisco Embarcadero (Author, 2016).

7.3.3 Use of Land Value Capture to finance infrastructure provision and incentivise private sector affordable housing

The Foreshore is not sufficiently serviced for residential or commercial use, and so a substantial amount of infrastructure investment will be needed for the development. McGaffin (interview, 2017) estimates (very roughly) that about R5 billion worth of infrastructure would be needed for the Foreshore development. This is more than the CoCT can currently afford, considering that its entire capital budget for 2017/18 is R5,3 billion (capetownbudgetproject.org.za). It is therefore crucial that the CoCT finds additional revenue sources to finance the provision of infrastructure in the Foreshore.

One way that this could be done is through land value capture, which is a form of tax that aims “to capture windfall gains created by infrastructure provision or those created through the planning system more generally” (Brown-Luthango, 2011: 44). The rationale for land value capture is that while government foots the bill for the provision of infrastructure, the private developers developing around the infrastructure capitalise on the increased value that these services give the site. In short, there is a “privatisation of benefits and a socialization of costs” of infrastructure and planning rights (Smolka & Mullahy, 2007: 4). The role of land value capture mechanisms, therefore, is to enable local government to reap some of the ‘betterment’ of land values that resulted from its investment in infrastructure. This has the dual function of providing additional municipal revenue and curtailing increases in land prices. This enables local government to expand its capital expenditure on infrastructure while also preventing land markets from becoming exclusionary.

This practice has seen great success in other countries in the global south, where infrastructure provision is closely tied to both poverty alleviation and economic growth (Brown-Luthango, 2011). The Colombia’s *participacion en plusvalias* (PP) betterment tax, enacted in 1997, funded a US \$800 million new public works programme in Bogota, starting in 2007 (Smolka & Mullahy, 2007). The PP has also created a more accessible land market because it curtailed the amount of profit that private developers could make on a development (Brown-Luthango, 2011).

There are a number of ways that value capture could be used in the Foreshore to both fund its infrastructure and incentivise private developers to include affordable housing units in their developments on the site. While value capture is often associated with Transport Oriented Development (TOD) because transport infrastructure produces some of the highest land value increases, there are alternative planning tools/products that can be used to create value in an area (McGaffin & Gavera, 2012). These can be divided into two broad categories:

1. “Use-related or socio-spatial restructuring mechanisms” that seek to “maximise the potential of infrastructure to bring about broader spatial and/or social outcomes such as densification or the inclusion of poorer households or communities” (McGaffin & Gavera, 2012: 20);
2. “Income or cost-recovery mechanisms” that “extract revenue in the guise of a tax or tariff from increment value to finance the infrastructure or some other development” (Ibid.).

Some use-related/ socio-spatial restructuring mechanisms are:

- *Density bonuses*: These enable a developer to maximise the amount of units on a site, thus reducing the land cost per unit and allowing them to charge less per unit (McGaffin & Gavera, 2012.).
- *Inclusionary zoning*: Certain areas with high development demand are demarcated as inclusionary zones. In these sites, developers are required to include a certain percentage of affordable units in their project in order to be granted permission to develop (Ibid.). Here, it is crucial that government give a clear definition of what they mean by ‘affordable units’, and that this definition is created with an understanding of who the market for the affordable units is.
- *Public-private partnership ‘joint development agreements’*: This is where public and private sector jointly fund infrastructure provision and then share the income generated from any developments resulting from the provision of this infrastructure (Ibid.).

Some income/ cost-recovery mechanisms are:

- *Betterment taxes*: This is a tax on private developments that benefit from an “increase in value resulting from some public action, such as the issuing of development rights or the provision of infrastructure” (McGaffin & Gavera, 2012: 25). This ensures that “those who benefit most from development also contribute towards the costs incurred” (Brown-Luthango, 2011: 43).
- *City/ Business Improvement Districts*: These are special ratings zones in which property owners are required to pay a levy to local government which goes towards countering “crime and grime” to improve business and property values in the area (McGaffin & Gavera, 2012: p.26). However, this can result in anti-poor practices, as homeless people and informal traders are often seen as contributing to ‘crime and grime’ and are thus forced out of the area (Tait & Jensen, 2007).
- *Development charges*: These are “levies imposed on developers of new or existing properties, usually ... in the course of an effective change in land use rights” (McGaffin & Gavera, 2012: 27). They are intended to “contribute to the cost of additional municipal infrastructure arising from the more intensive development associated with these land use rights” (Ibid.). The income from these levies can be used as after-the-fact finance of existing infrastructure on the development site, or to cover the cost of new infrastructure that will enable the development to take place, as would be the case with the Foreshore.
- *Land value increment taxes*: This is where municipal government claims tax from private developers for the ‘increment’ or increase in property values that resulted from government expenditure on infrastructure in the area of the development (Ibid.). It is different to Betterment tax in that it relates only to infrastructure expenditure rather than all government planning actions. This can be difficult to put into practice due to the time lag between implementation of infrastructure and accumulation of value. However, this can be overcome by creating a strong contact between the municipality and the private developers in the area, which creates surety of payment for both parties.

The value capture strategies that should be used to finance the infrastructure for the Foreshore development are joint development agreements, betterment taxes, development charges, and land value increment taxes. Strategies that should be used to incentivise private sector provision of affordable housing are density bonuses and inclusionary zoning. These make affordable housing provision both feasible and mandatory for the private sector.

“Affordable units’ to be provided by the private sector should be defined as either:

1. Sectional title units that are valued at and sold for less than R500 000;
2. Rental units that cater to households with an income of below R15 000pm - in other words, the rental charge for these units should be less than a third of the income of these households. For example, an affordable rental rate for a household of R10000pm would be R3333pm or less.

Ensuring that affordable private sector units benefit current and future low income households

The difficulty of having affordable units that are part of the open market as opposed to those that are managed by a Social Housing Institution is that there is no regulatory framework for ensuring a) that the people who buy or rent these units are in fact low income groups, and b) that units bought at an affordable price are not later resold at an unaffordable price (McCarthy interview, 2017). Therefore, in addition to achieving private sector provision of affordable housing, there needs to be a regulatory framework for ensuring that these units are sold/rented to the low income households who need them most, and that their affordability extends beyond their resale.

7.3.4 Provision of high density social housing with a mix of uses

As a non-profit industry with limited funding, the social housing sector runs on a very tight budget, which affects the types of units it can produce. Social housing developments usually consist of two- to four-storey walk-ups that do not require elevators (which are expensive to implement and maintain). There are usually no additional land uses beyond residential, as these are not mandatory and are therefore not budgeted for. Thus, in order to produce social housing in the Foreshore that has an urban form and density, and which includes a mix of uses, the current regulations around the design and layout of social housing need to be adjusted and funding for these adjustments must be sourced.

Design guidelines for high-rise, high density social housing: Brickfields & Legae as precedent

Clear design guidelines need to be generated for social housing units - especially those requiring high densities with units that are more than four storeys high - as there is currently no cohesive framework for this (McCarthy interview, 2017). This should be based on the design and layout of existing successful social housing projects. An example of this is Brickfields & Legae in Newtown, Johannesburg (shown in Figure 7.4), which is one of the only high-rise social housing developments in the country (SHIFT, 2005). This project contains:

- Two nine-storey tower blocks (each with a staircase and stretcher lift) and some three- and four-storey walk ups.
- A total of 537 dwelling units consisting of: 131 x 1 bedroom units (35m²-45m²), 391 x 2 bedroom units (40m²-60m²), 14 x 3 bedroom units (67m²-80m²), 1 x bedsit unit (35m²)
- 217 parking bays (thus making a ratio of 0,4 bays per unit)
- 23 commercial units, some of which are live-work units that comprise of a 20m² shop space with a two bedroom dwelling unit above it.
- Two crèches, two community meeting room, one supervisor's office, and two guard houses. There are also several play areas within the courtyards of the precinct, as shown in Figures 7.5 and 7.6.

The Brickfields & Legae project manages to achieve high-rise high densities while still remaining both financially viable and able to offer affordable rentals.



Figure 7.4: Brickfields and Legae social housing project, Johannesburg (<http://savagedodd.co.za/wp-content/uploads/2017/05/aerial-view-2048x758.jpg>)

Some of the key features that enable this are:

- The land for the development was owned by the City of Johannesburg, who gave it to the SHI in charge of the development (Johannesburg Housing Company [JHC]) free of charge. This reduced the total development costs to R89 174 494, amounting to R166 060 per unit.
- The JHC was well-established enough that it had substantial equity of its own (R15,5 million) to invest in the project.
- There were multiple sources of funding other than the Institutional Subsidy Grant and National Housing Finance Centre (NHFC) loan.
- Parking provision was reduced to free up more land and maximise the rentable floor area

These are key lessons for a “sophisticated project like the Foreshore”, where it will be essential to have a “strong SHI, who have already got development capacity” and are able to contribute their own equity to the project (McCarthy interview, 2017). Further, using City-owned land that is given to SHIs free of cost is “the only way at the moment that we have of making social housing work within really well-located areas ... otherwise, if you rely on the fact that you’ll get your land purchasing costs from the subsidy, you’re inevitably going to have to go to peripheral parts of the city” (McCarthy interview, 2017).

Facilitate more mixed-use social housing developments by aligning with broader urban regeneration programmes and strategically incorporating private sector

Social housing needs to be incorporated into broader City programmes for urban regeneration. This way, it can co-ordinate with other functions of these plans, such as sports and recreation, education, skills development, and environmental projects (NASHO, 2011). Incorporating these different government projects into social housing precincts would enable them to include a variety of uses without having to further split the already tight social housing subsidies and grants. Each project would be funded by its respective governing body. This would enable social housing’s funding (RCG, Institutional Subsidy, NHFC loan, and any equity invested by SHIs) to be maximised on the provision of housing, while the other governmental projects supported this with a variety of relevant uses.

In addition to incorporating different sectors of government, SHIs should partner with private sector developers to create mixed use developments. While SHIs can rarely afford to provide more than their mandate of residential units, private sector developers have more freedom to develop non-residential land uses. SHIs should maximise this capacity by negotiating joint developments with private sector developers that are beneficial for both parties. These should not compromise on the



Figure 7.5: Enclosed playing field in Brickfields social housing precinct (<https://www.jhc.co.za/sites/default/files/building/images/201705/lkc0413brickfieldscopy.jpg>)



Figure 7.6: Playground in Brickfields social housing precinct (<https://www.jhc.co.za/sites/default/files/building/images/201705/lkc0307tribunalgardenscopy.jpg>)

SHI objective of providing affordable rental units. SHIs should be seen as a good partner for private developers, as “social housing is proven to stabilise neighbourhoods through catalytic investment, good management and community development” (Hogarth, 2015:69). Further, properties surrounding social housing tend to increase in value, thus “attracting increased private sector investment, while protecting affordable housing for low-income families, thereby creating inclusive, integrated, vibrant communities” (Ibid.).

7.3.5 Release state land directly to SHIs to use as leverage in negotiations with private sector

Partnerships between SHIs and private sector can jeopardise the objective of social housing to provide affordable rental units, because private developers have the primary objective of maximising the returns on their investment (McCarthy interview, 2017). Therefore, in order to enable effective partnerships between SHIs and private for-profit developers, SHIs need to be able leverage their affordability agenda over the profit agenda. One way to enable this is to use state-owned land that is released directly to SHIs rather than into the open market (McCarthy interview, 2017). This land should ideally be given to the SHIs free of charge, as in the Brickfields & Legae example, because this drastically reduces the development costs and ultimately enables more affordable units (Ibid.).

Although it is not an implemented plan, Ndifuna Ukwazi's 2017 proposal for social housing on two Province-owned erven in Tafelberg is a good example of how releasing state owned land directly to SHIs can enable more private sector involvement and a mix of uses. This proposal calculated that, if this procedure was followed, the Tafelberg site could accommodate 316 social housing units as well as 121 private sector units (including retail units) (Ndifuna Ukwazi, 2017). Further, the SHI would still have been able to pay province R76 million for the land (Ibid.). This proposal, shown in Figure 7.7, also includes a school and a park, thus illustrating the potential for creating mixed use and public-private development through the process of releasing land directly to SHIs.

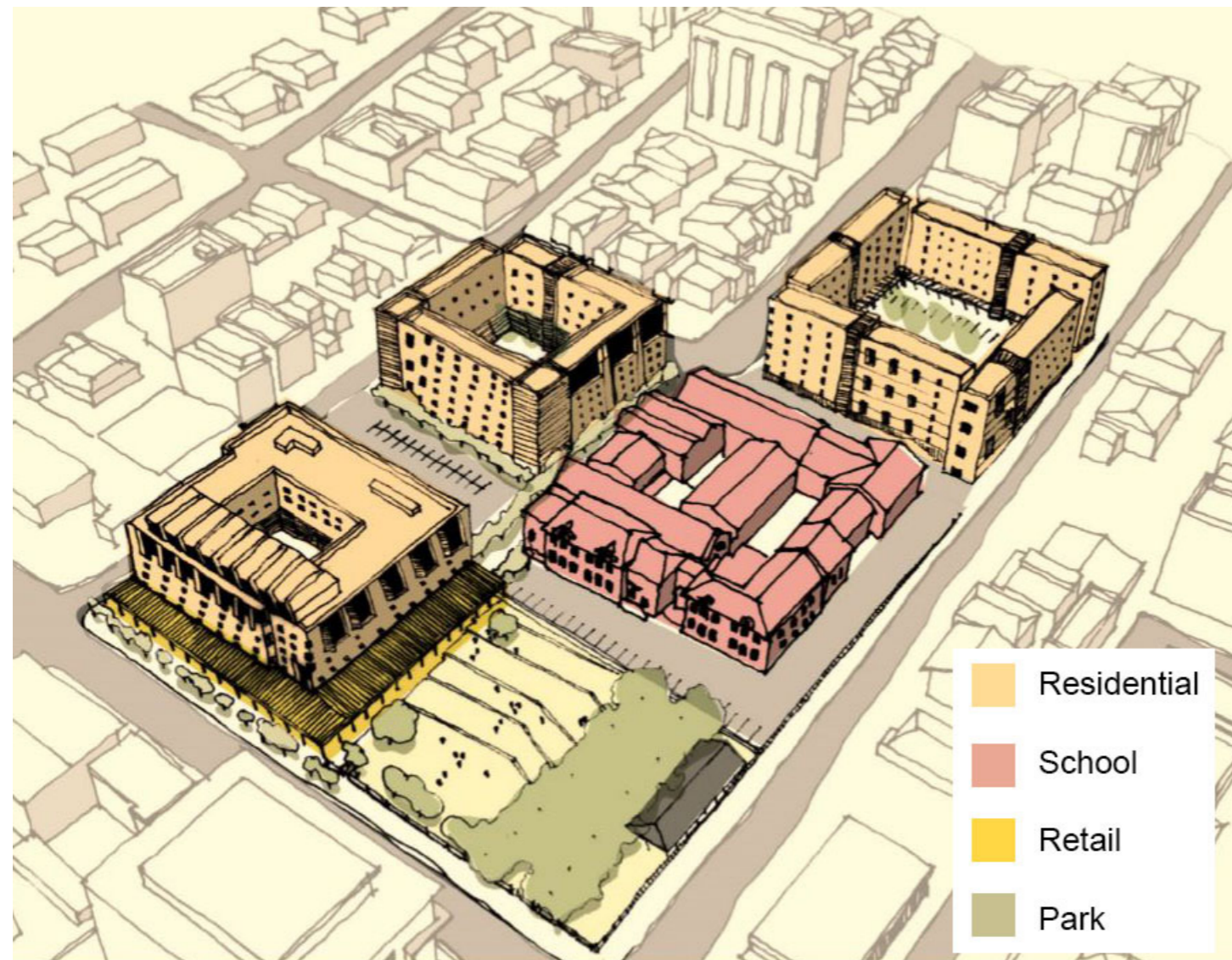


Figure 7.7: Tafelberg site social housing proposal (Ndifuna Ukwazi, 2017).

7.3.6 Converting Customs Housing from offices to residential units

This project is an example of a strategy for producing affordable inner city housing. Converting office buildings into residential buildings is “a way of solving the problems of both an office space surplus and a housing space shortage” (Mackay et al, 2009: 1). Repurposing an existing building is cheaper than constructing an entirely new building, and this reduced cost of development enables the resulting dwelling units to be sold at lower prices than new-built units (McGaffin interview, 2017).

The Customs House building (shown in Figure 7.8), currently serves as the offices of some departments of provincial government. These departments should consolidate into existing or new office space elsewhere so that the building can be refurbished as residential. As Figure 7.9 shows, the raised parking lot surrounding the building should be demolished, but the bulk of the building should remain. At sixteen storeys high, this building could provide several hundred dwelling units if converted to residential use.



Figure 7.8: Customs House building (http://saarcimag.weebly.com/uploads/1/3/4/3/1343219/7146115_orig.jpg)

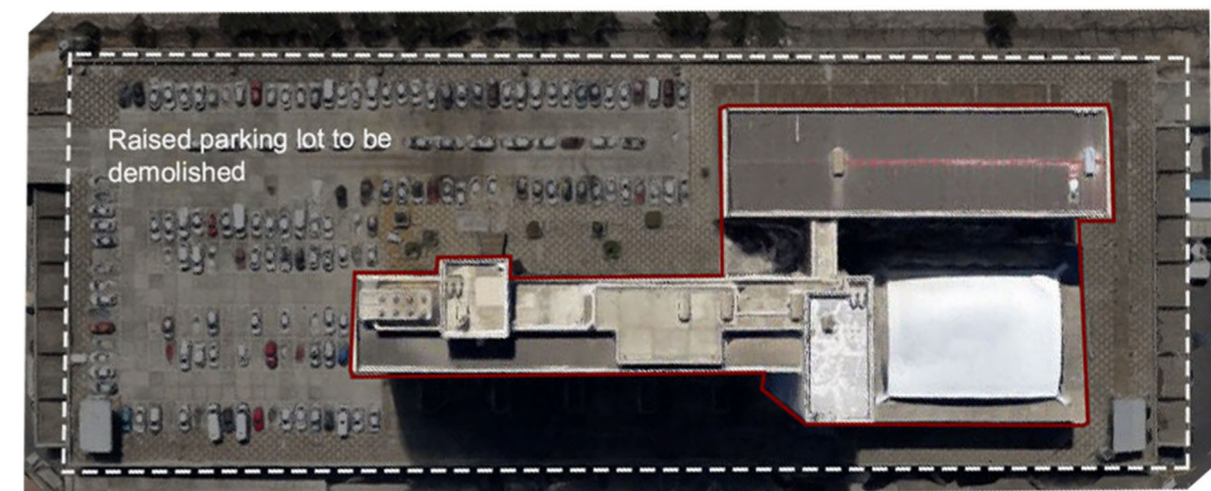


Figure 7.9: Aerial view of customs house building and parking lot (Author, 2017, adapted from Google Maps, 2017).

7.3.7 Reconstruction of Adderley Pier

A shortened version of the historical Adderley pier will be constructed along its original axis extending from Adderley street. The original Adderley pier, built in 1913, acted as a strong connection between the city and the sea, as seen in Figure 7.10. The pier and adjacent Roggebaai beach were also popular public spaces, as seen in Figures 7.11 and 7.12. The new pier will fulfil both of these functions, but needs to be short enough that it does not interfere with shipping routes for the adjacent cruise liner terminal.



Figure 7.10: Adderley pier, c.1920 (<http://4.bp.blogspot.com/-NLlxpORvQAY/TfZr8v9KHJI/AAAAAAAAACgg/C1VJlqzLhHM/s1600/Adderly+street+pier.jpg>)



Figure 7.11: Public life on the Adderley pier, c.1920 (<https://pbs.twimg.com/media/BTuQBOUCMAAJKwK.jpg>)



Figure 7.12: View of Adderley pier from Roggebaai shore, c.1920 (<https://i.pinimg.com/originals/23/4c/9e/234c9eae8282ebf4b93722efdd61825f.jpg>)

7.3.8 Establish neighbourhood management groups and residents associations to facilitate active citizenship

Active citizenship refers to citizens voluntarily participating in the management and development of their local areas/ neighbourhoods (Kearns, 1992). This disrupts the top-down approach of administrative governance, thus empowering the individuals who take part in these grassroots organisations (Miraftab & Wills, 2005). It also alleviates pressure on state operational resources, as citizens voluntarily take over some state functions such as surveillance and cleansing. Active citizenship can be promoted through establishing neighbourhood management groups and residents associations (RAs). Here, residents in a certain area come together to discuss common issues and plan local projects for the upkeep of their neighbourhood. These organisations also provide an avenue for citizen-state relationships. Government public participation processes call on RAs and other community organisations to comment on development plans in their areas (Healey, 2009).

Some community organisations that should be established in the Foreshore to promote active citizenship are:

- Foreshore residents association
- Neighbourhood watch groups
- Neighbourhood management groups

Some of the functions these organisations would serve are: organising community meetings to discuss neighbourhood issues (which could then be taken to the ward councillor); safety surveillance (through neighbourhood watch); organising neighbourhood upliftment projects such as community gardens or litter collection; organising events such as concerts and markets.

These organisations also help to create cohesive communities within a neighbourhood, as they encourage interpersonal connections amongst residents (Kearns & Parkinson, 2001). This is especially important in the context of a city like Cape Town, with its historical and present context of socio-spatial segregation. Establishing these community organisations would therefore help to negate this segregation and promote integrated neighbourhoods in the Foreshore.

7.4 Implementation framework

This section provides a framework for the phased implementation of the plan presented in Chapter 6, including the key strategies and projects discussed in the previous section. The estimated 20 year timeframe is divided into short- and medium-term phases, each spanning ten years. Ideally, construction should be able to begin within a few years of the plan's inception, but in reality it can take ten to fifteen years (McCarthy interview, 2017). Some ongoing operational projects are for the site are included in a third, long-term phase.

7.4.1 Short term implementation: Pre-construction (years 1-10)

The short-term phase of implementation covers the projects and processes that are required during the pre-construction period, spanning years 1-10. The primary objectives for this phase of implementation are to ensure that social housing and affordable housing are prioritised in the plans for the Foreshore, and that the City is able to recoup some of the land value increase generated through its investment in infrastructure or rights granted. This is represented in Table 7.1.



Map 7.1: Removal of freeways and implementation of basic infrastructure (Author, 2017).

Objective	Strategic intervention	Key stakeholders	Funding	Timeframe (years 1 - 10)												
				1	2	3	4	5	6	7	8	9	10			
1. Prioritise social housing and affordable housing	Public participation.	City of Cape Town, Transnet, private landowners in Foreshore, City Bowl residents and businesses, social housing candidates.	CoCT													
	Tender for two to three well-established SHIs to provide and run the social housing.	CoCT, NASHO, SHRA, interested established SHIs (such as Communicare and Cape Town Community Housing Company).	CoCT													
	Tender for socially conscious private developers to partake in the project.	CoCT, private developers.	CoCT													
	Create general social housing design guidelines to include models for medium- to high-rise urban form.	NASHO, SHRA, all SHIs nationally, urban design team, social housing residents.	NASHO, NSHFC													
	Rezone Foreshore area as a: <ul style="list-style-type: none"> • Restructuring Zone (to enable construction of social housing) • Inclusionary Zone (to facilitate private sector affordable housing) • Land value increment tax zone (to fund infrastructure) • Betterment tax zone (to fund infrastructure) 	CoCT, appointed SHIs, private developers.	CoCT													
	Transfer CoCT and Transnet land to SHIs.	CoCT, Transnet, appointed SHIs.	SHIs via RCG, ISG, and loans.													
	Negotiate and agree upon development framework, precinct plans, SDPs, and buildings plans.	CoCT, appointed SHIs, private developers, traffic engineers, and buildings plans.	CoCT, appointed SHIs, private developers.													
2. Capture land value increment resulting from state provision of infrastructure and rights.	Apply the zoning rights and subdivisions negotiated during the planning process. Betterment tax to be enforced.	CoCT, private developers.	CoCT, private developers.													
	Remove elevated freeways; implement basic infrastructure (water, electricity, sewerage lines, broadband) and new roads (see Figure). Land value increment tax to be enforced.	CoCT, private developers.	CoCT, private developers.													

Table 7.1: Short-term implementation framework (Author, 2017)

7.4.2 Medium term implementation: Construction
(years 11-20)

The medium-term phase covers the construction of the proposed plans and projects, spanning years 11-20. A primary objective for this phase is to ensure that the construction process produces the development plans agreed upon during the negotiation process. The second objective is to ensure that construction occurs in a logical and financially efficient order. This will ensure that buildings can start earning rental income as soon as possible once they are complete. For this reason, development should be done in phases so that some units can be inhabited whilst the rest are still being built. As Maps 7.2, 7.3 and 7.4 show, development should start in Precincts 2 and 3, and end in Precinct 1. The full medium-term implementation framework is represented in Table 7.2.

Objective	Strategic intervention	Key stakeholders	Funding	Timeframe (years)												
				11	12	13	14	15	16	17	18	19	20			
1. Ensure that development takes the form agreed upon during negotiations	Public participation.	CoCT, Transnet, private landowners in Foreshore, City Bowl residents and businesses, social housing candidates.	CoCT													
	Establish project management team that represents both public & private interests.	CoCT, private developers, SHIs.	CoCT, private developers, SHIs.													
2. Ensure a logical and financially efficient order of construction processes	Phase 1 (See Figure): - Precinct 2 blocks adjacent to CBD - Precinct 3 commercial blocks To be inhabited in Year 15.	CoCT, private developers, SHIs.	SHIs, private developers.													
	Phase 2 (see Figure): - Precinct 2 schools and parks - Precinct 2 remaining blocks To be inhabited in Year 18.	CoCT, Western Cape Government, private developers, SHIs.	SHIs, private developers, CoCT, Western Cape Government.													
	Phase 3 (see Figure): - Precinct 1 residential/ mixed use blocks - Promenade & Adderley Pier - Public transport introduced into site.	CoCT, private developers, SHIs.	CoCT, private developers, SHIs.													

Table 7.2: Medium-term implementation framework (Author, 2017).



Map 7.2: Phase 1 of construction (Author, 2017).



Map 7.3: Phase 2 of construction (Author, 2017)



Map 7.4: Phase 3 of construction (Author, 2017).

7.4.3 Long term implementation: Ongoing management

The long-term phase of implementation covers some of the ongoing management projects and strategies that take place after construction is complete and residents and businesses have inhabited the space. The objectives for this phase are to promote and facilitate active citizenship, and to encourage the use of public open space. The projects/strategies entailed in this are detailed in Table 7.3.

Objective	Strategic intervention	Key stakeholders	Funding
1. Promote and facilitate active citizenship	Establish civil society organisations: - Foreshore Residents Association - Neighbourhood management groups - Neighbourhood watch groups	CoCT, SHIs, Foreshore residents.	Foreshore residents.
2. Encourage use of public open space	Establish Foreshore park management team to maintain parks and promenade.	CoCT, Foreshore residents and businesses.	CoCT
	Provide for informal trade in public open spaces through policy and spatial interventions.	CoCT, informal traders.	CoCT
	Host outdoor events such as Open Streets days, 'Midnight Mass' cycles, fun runs, markets, sports days, concerts etc.	CoCT, NGOs such as Open Streets, musicians, traders, residents of the Foreshore and greater Cape Town, tourists.	Dependant, but could include CoCT, NGOs, Foreshore residents.

Table 7.3: Ongoing management framework (Author, 2017).

7.5 Conclusion

This chapter began by identifying problems with the current development process and the package of plans process. It then offered strategies for overcoming these issues and ensuring that the development framework in chapter 6 was implemented effectively and justly. The key strategies and projects entailed in the development framework were discussed in more detail, and were incorporated into a phased implementation framework. The take home point from this chapter is that the City needs to leverage its administrative powers (zoning rights and infrastructure provision) to intervene in profit-driven land markets and ensure that developments are implemented in a way that is fair and in accordance with City spatial plans and objectives.

8. CONCLUSIONS

This dissertation has demonstrated that it is both possible and essential to develop affordable housing in the inner city of Cape Town. The contextual analysis of Cape Town and the City Bowl revealed the stark “physical disconnection between jobs and population”, where exclusionary land markets push low-income households to the urban periphery (Sinclair-Smith & Turok, 2012: 391). This dislocation exacerbates social inequality, as these low income households are made to spend a significant amount of time and money on travelling to reach their jobs and major public facilities. Through this, it becomes clear that there is a need for affordable housing within areas of opportunity and employment. The site analysis identified the Foreshore as just such a site, due to its proximity to the jobs, transport, and social facilities of the City Bowl. Introducing affordable housing into the Foreshore would be a significant step towards socio-economically integrating the fragmented city. It would also strengthen the economic role of the city centre. The provision of more residential space caters to the growing demand for mixed-use developments that is fuelling the ‘suburban flight’ of firms. Providing affordable, inner-city housing therefore has far-reaching benefits for the City Bowl and Cape Town as a whole.

The review of government housing policies, together with the assessment of Cape Town’s current housing market, identified social housing as the best model of affordable housing for the Foreshore. This programme caters to the intended market for the Foreshore housing: people employed in lower-paying jobs in the CBD. The salary range of these jobs is between R3500 - R15 000pm, which aligns with the market for social housing. Further, the fact that social housing consists of rentals rather than sectional title units means that these units:

1. Remain outside of the open land market and are therefore immune to unscheduled price increases.
2. Can only be accessed by low-income households due to the tenant screening process;
3. Can benefit multiple low income families at different times, unlike sectional title units that only benefit the one family that receives ownership of the unit.

However, in the interest of diversity and feasibility, social housing should not be the only model of affordable housing implemented in the Foreshore. Further, housing should not be the only land use within the Foreshore site. Chapter 5 explained the importance of creating multifunctional spaces that fulfil a variety of human needs (without compromising the natural environment). This multifunctionality should be incorporated into a compact, urban built form. This should balance high residential densities with an abundance of public open spaces to create safe, lively, walkable spaces.

Chapter 6 demonstrated spatially how these design elements could be applied to the development of the Foreshore. The objective was to create liveable, affordable, urban neighbourhoods that are integrated socially and spatially into their surrounds. These place-making aspects of spatial design are what create homes within cohesive neighbourhoods rather than just a collection of physical shelters. Ultimately, the spatial development framework calculated that, if the elevated freeways were removed and Transnet’s land was made available for development, at least 8500 dwelling units could be accommodated in the Foreshore site. This would give 21 250 new residents the ‘right to urban life’ in the city centre. Due to the conceptual level of the framework, it would have been inappropriate to try to calculate exactly how many of each type of affordable units (social housing or market) could be provided in the site. This would have to be calculated in the precinct plans and site development plans that come after the development framework in the package of plans process.

Using the package of plans process as a framework, Chapter 7 explored the technicalities of how to implement the Foreshore plan - with its emphasis on affordable housing - in the context of profit-driven land markets. It is clear that there needs to be collaboration between private, for-profit developers, the City, and SHIs. This is the only way that the vision of a mixed use, high density, and affordable Foreshore neighbourhood could be realised. Public sector alone cannot fund the substantial infrastructure investment needed for the development, and SHIs cannot always afford to produce high density, mixed use projects. Private sector involvement is therefore key to making the Foreshore development possible. However, the

City needs to leverage its administrative powers (zoning rights and infrastructure provision) during negotiations with private actors. It must ensure that the development is implemented in a way that is fair and in accordance with City spatial plans and objectives.

Some key strategies for enabling this are:

1. To use land value capture taxes and inclusionary zoning to finance infrastructure provision and incentivise private sector provision of affordable housing;
2. To transfer City land directly (and preferably free of charge) to SHIs who can then use it as leverage in their negotiations with private developers.

These strategies are not limited to Foreshore site. They could therefore be used to enable the implementation of affordable housing elsewhere in the inner-city of Cape Town and, potentially, other cities in South Africa.

Finally, this dissertation has looked at only the first few stages of what would undoubtedly be a lengthy and complex development process. A contextual analysis and spatial development framework for the Foreshore have been provided here, but there would need to be multiple more detailed plans made for the precincts, sites, and buildings in the development. Expert advice would be needed to properly address issues such as traffic engineering, environmental and heritage impact assessments, and urban design. However, this dissertation has focused on what city planners can do to envision and enable a project like this. It has shown that, through careful analysis of a site and its market context, appropriate affordable housing models can be identified and then implemented with strategic use of government resources and powers.

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- Weather Finder: https://www.windfinder.com/windstatistics/table_bay
- V&A Waterfront: <http://www.waterfront.co.za/news/Developments/ships-ahoy>
- Urban Cape Town: <http://urbancapetown.co.za/2017/03/28/kpmg-place-rising-rapidly/>

Application for Approval of Ethics in Research (EiR) Projects
Faculty of Engineering and the Built Environment, University of Cape Town

APPLICATION FORM

Please Note:

Any person planning to undertake research in the Faculty of Engineering and the Built Environment (EBE) at the University of Cape Town is required to complete this form **before** collecting or analysing data. The objective of submitting this application *prior* to embarking on research is to ensure that the highest ethical standards in research, conducted under the auspices of the EBE Faculty, are met. Please ensure that you have read, and understood the **EBE Ethics in Research Handbook** (available from the UCT EBE, Research Ethics website) prior to completing this application form: <http://www.ebe.uct.ac.za/usr/ebe/research/ethics.pdf>

APPLICANT'S DETAILS	
Name of principal researcher, student or external applicant	Megan Weber
Department	Architecture, Planning and Geomatics
Preferred email address of applicant	megweberlake@gmail.com
If a Student	Your Degree e.g. MSc, PhD, etc.
	Name of Supervisor (if supervised)
If this is a research contract, indicate the source of funding/sponsorship	N/A
Project Title	Inner-city social housing: A spatial development plan for the Cape Town foreshore precinct

I hereby undertake to carry out my research in such a way that:

- there is no apparent legal objection to the nature or the method of research; and
- the research will not compromise staff or students or the other responsibilities of the University;
- the stated objective will be achieved, and the findings will have a high degree of validity;
- limitations and alternative interpretations will be considered;
- the findings could be subject to peer review and publicly available; and
- I will comply with the conventions of copyright and avoid any practice that would constitute plagiarism.

SIGNED BY	Full name	Signature	Date
Principal Researcher/ Student/External applicant	Megan Weber	Signed	23 Jun 2017

APPLICATION APPROVED BY	Full name	Signature	Date
Supervisor (where applicable)	Vanessa Watson	Signed	23 Jun 2017
HOD (or delegated nominee) Final authority for all applicants who have answered NO to all questions in Section 1, and for all Undergraduate research (Including Honours)	Iain Louw	Signed	23 Jun 2017
Chair - Faculty EIR	Click here to	Signed	Click

G. SITHOLE Page 1 of 2

31 JULY 2017

Application for Approval of Ethics in Research (EiR) Projects
Faculty of Engineering and the Built Environment, University of Cape Town

Committee	enter text.	enter text.
For applicants other than undergraduate students who have answered YES to any of the above questions		



SCHOOL OF ARCHITECTURE, PLANNING AND GEOMATICS
 University of Cape Town
 Private Bag x3, Rondebosch 7701
 Centlivres Building
 Email: Janine.Meyer@uct.ac.za Tel: 27 21 6502359

UNIVERSITY OF CAPE TOWN

STATEMENT TO BE READ OUT TO AN INTERVIEWEE BY A STUDENT ABOUT TO UNDERTAKE AN INTERVIEW FOR THE PURPOSES OF RESEARCH, AS A REQUEST FOR PERMISSION FOR THE NAME AND/OR IDENTITY OF THE INTERVIEWEE TO BE REVEALED IN THE DISSERTATION

MY NAME IS MEGAN WEBER AND I AM STUDYING CITY AND REGIONAL PLANNING AT THE UNIVERSITY OF CAPE TOWN.

I AM DOING RESEARCH ON SOCIAL HOUSING AS PART OF MY MASTERS DISSERTATION AND I WOULD LIKE TO ASK YOU SOME QUESTIONS TO HELP ME WITH MY RESEARCH.

I WOULD LIKE TO USE YOUR NAME, DESIGNATION AND POSSIBLY DIRECT QUOTES IN MY ESSAY/ REPORT/ DISSERTATION AS A SOURCE OF INFORMATION. PLEASE INDICATE YES OR NO BELOW TO GIVE OR WITHOLD YOUR PERMISSION FOR ME TO DO THIS.

YES I GIVE PERMISSION FOR YOU TO USE MY NAME / DESIGNATION / WORDS IN YOUR DISSERTATION

NO I DO NOT GIVE PERMISSION FOR YOU TO USE MY NAME / DESIGNATION / WORDS IN YOUR DISSERTATION

IF YOU WANT TO END THE INTERVIEW AT ANY POINT YOU ARE FREE TO DO SO. A COPY OF THIS FORM CAN BE GIVEN TO YOU UPON REQUEST.

MY SUPERVISOR IS DR. VANESSA WATSON AND HER CONTACT DETAILS ARE: VANESSA.WATSON@UCT.AC.ZA.

Signed
 SIGNATURE OF INTERVIEWEE

NAME:
 DESIGNATION:
 DATE:

Signed
 SIGNATURE OF STUDENT

NAME: MEGAN WEBER
 DESIGNATION: STUDENT
 DATE: 26/09/2017



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MY NAME IS MEGAN WEBER AND I AM STUDYING CITY AND REGIONAL PLANNING AT THE UNIVERSITY OF CAPE TOWN.

I AM DOING RESEARCH ON AFFORDABLE HOUSING AS PART OF MY MASTERS DISSERTATION AND I WOULD LIKE TO ASK YOU SOME QUESTIONS TO HELP ME WITH MY RESEARCH.

I WOULD LIKE TO USE YOUR NAME, DESIGNATION AND POSSIBLY DIRECT QUOTES IN MY ESSAY/ REPORT/ DISSERTATION AS A SOURCE OF INFORMATION. PLEASE INDICATE YES OR NO BELOW TO GIVE OR WITHOLD YOUR PERMISSION FOR ME TO DO THIS.

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Signed
 SIGNATURE OF INTERVIEWEE

NAME: R. MCGAFFIN
 DESIGNATION: social urbanism (uct)
 DATE: 26/9/2017.

Signed
 SIGNATURE OF STUDENT

NAME: MEGAN WEBER
 DESIGNATION: STUDENT
 DATE: 26/09/2017