Draft Development Framework /Rezoning Report

for the

Western Cape Government:
Department of Transport & Public Works

in Respect of:

The Conradie Better Living Model Exemplar Project ("BLMEP")

(Second Draft)

19 May 2016

By: Ignis Project & Finance Solutions (Pty) Ltd
# TABLE OF CONTENTS

1 Introduction ......................................................................................................................... 12

2 Part One: Land Use Application ....................................................................................... 13

2.1 Purpose .............................................................................................................................. 13

2.2 Application Scope ........................................................................................................... 13

2.3 Application Details .......................................................................................................... 13

2.4 Development Rights and Conditions ............................................................................ 14

2.5 Property Details ................................................................................................................ 17

2.5.1 The Applicant ................................................................................................................ 17

2.5.2 Property Description ..................................................................................................... 17

2.5.3 Erf numbers and zoning ............................................................................................... 18

2.5.4 Title Deeds and Conveyancing Certificate ............................................................ 18

2.6 Proposed Zoning .............................................................................................................. 21

2.7 Proposed Consolidation and Subdivision .................................................................... 22

2.8 Motivation and Desirability ............................................................................................. 23

2.8.1 Development proposal ................................................................................................ 23

2.8.2 Desirability .................................................................................................................... 23

2.8.3 Compatibility with policy and planning frameworks .............................................. 24

2.8.4 Compatibility with surrounding land uses ............................................................ 24

2.8.5 Socio-Economic impact ............................................................................................... 25

2.8.6 Impact on biophysical environment .......................................................................... 27

2.8.7 Impact on Sustainability ............................................................................................. 27

2.8.8 Traffic Impact ................................................................................................................ 27

2.8.9 Heritage and Visual Impact ........................................................................................ 29

2.8.10 Engineering/Services Impact ................................................................................... 29
2.8.11 Land use planning recommendations ................................................................. 30
2.8.12 Services Recommendations .................................................................................. 32
2.8.13 Heritage Recommendations .................................................................................. 32
2.8.14 Transport Recommendations ................................................................................ 33

3 Part 2: Development Framework for the Conradie BLMEP ........................................... 35
3.1 Introduction .................................................................................................................. 35
3.2 Planning and Legislative Context ............................................................................. 36
3.2.1 National Development Plan (2012) ...................................................................... 37
3.2.2 Spatial Planning and Land Use Management Act (SPLUMA) .............................. 38
3.2.3 Medium term Strategic Framework (2014) ......................................................... 39
3.2.4 One Cape 2040 Vision (2012) .............................................................................. 39
3.2.5 Provincial Strategic Plan (Better Living Model) 2014-2019 ................................. 40
3.2.6 Provincial Spatial Development Framework.......................................................... 41
3.2.7 CTSDF.................................................................................................................. 45
3.2.8 Table Bay District Plan ........................................................................................ 53
3.2.9 Built Environment Performance Plan 2015/16 (BEPP) ...................................... 57
3.2.10 Voortrekker Road Corridor Regeneration Framework (Beta edition March 2014) 61
3.2.11 Safety & Security Policies: .................................................................................. 62
3.2.12 Minimizing the Impact of Storm water from Urban Development on Receiving Waters 63
3.2.13 Biodiversity and Alien Vegetation Management ............................................... 64
3.2.14 Landscape Plan Submission Requirements....................................................... 64
3.2.15 City Parks Development Policies (City of Cape Town 2004) ............................. 64
3.2.16 Parks Development Policy (City of Cape Town 2015 ) ..................................... 66
3.2.17 Cape Town Densification Policy (City of Cape Town) 2012

3.3 Other Statutory Requirements

3.3.1 Environmental Authorisation

3.3.2 Water Associated Issues

3.3.3 Water Use Licence in terms of the National Water Act

3.3.4 Heritage

3.4 Contextual Analysis

3.4.1 Climate

3.4.2 Existing Road Network and Public Transport Infrastructure

3.4.3 Proposed Access (Contextual Movement)

3.4.4 Bulk Services

3.4.5 Local Context

3.4.6 Natural Context

3.4.7 Transport Considerations

3.4.8 Socio-Economic Impact Assessment

3.5 Summary of Contextual Informants

3.5.1 Challenges and Constraints

3.5.2 Opportunities

3.6 Role of the Site

3.6.1 Historical Role

3.6.2 Future Role – Vision and Objectives

3.7 Urban Design Principles

3.8 Illustration of the Proposed Development

3.8.1 Primary urban design objectives for the site
3.9 Development Concept ........................................................................................................ 136
3.9.1 The Location .................................................................................................................. 136
3.9.2 The Site .......................................................................................................................... 136
3.9.3 The Spatial Layout ........................................................................................................ 137
3.9.4 The Open Space System ............................................................................................... 140
3.9.5 The Movement System ................................................................................................. 141
3.9.6 The Development Mix (Land Use) .............................................................................. 143
3.9.7 Landscape Design ....................................................................................................... 150
3.10 Development Controls and Guidelines ......................................................................... 154
3.10.1 Illustrative Development Yield ................................................................................... 156
3.10.2 Parking Reduction Motivation .................................................................................. 157
3.10.3 Proposed Parking Provision Ratios ........................................................................... 158
3.10.4 Land uses .................................................................................................................... 160
Annexures ................................................................................................................................ 166
Annexure A Power of Attorney from Western Cape Government and City of Cape Town .......................................................................................................................... 167
Annexure B Surveyor General’s Diagram ............................................................................. 168
Annexure C Title Deed .......................................................................................................... 169
Annexure D Letter of Support DoT ..................................................................................... 170
Annexure E Relevant Planning Frameworks ......................................................................... 171
Annexure F Heritage Impact Assessment including Visual Impact Assessment ................ 172
Annexure G Engineering Services Impact Assessment ........................................................ 173
Annexure H DEADP Confirmation of (2/12 and 17/2) Environment Authorisation ....... 174
Annexure I DWS Communication GA Condition ............................................................... 175
Annexure J TIA ....................................................................................................................... 176
Annexure K Socio-Economic Impact Assessment ............................................................. 177
Annexure L Sustainability Impact Assessment .................................................................... 178
Table of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General Maximum Building Height Conditions</td>
<td>16</td>
</tr>
<tr>
<td>2</td>
<td>Property Location</td>
<td>17</td>
</tr>
<tr>
<td>3</td>
<td>Relevant erven</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>Proposed subdivision and consolidation</td>
<td>22</td>
</tr>
<tr>
<td>5</td>
<td>General Maximum Building Height Conditions</td>
<td>25</td>
</tr>
<tr>
<td>6</td>
<td>Locality Plan</td>
<td>36</td>
</tr>
<tr>
<td>7</td>
<td>Extract from the CTSDF: 2015</td>
<td>45</td>
</tr>
<tr>
<td>8</td>
<td>Extract from the Table Bay District Plan, 2012</td>
<td>55</td>
</tr>
<tr>
<td>9</td>
<td>Spatial Development Plan. Extract from the CTSDF, 2012</td>
<td>56</td>
</tr>
<tr>
<td>10</td>
<td>The Relationship of the BEPP to other Plans and Instruments</td>
<td>57</td>
</tr>
<tr>
<td>11</td>
<td>Extract from the BEPP, 2015 illustrating the integration zones</td>
<td>58</td>
</tr>
<tr>
<td>12</td>
<td>Forest Drive gateway entrance</td>
<td>69</td>
</tr>
<tr>
<td>13</td>
<td>Hall /Chapel</td>
<td>71</td>
</tr>
<tr>
<td>14</td>
<td>Gateway Precinct</td>
<td>71</td>
</tr>
<tr>
<td>15</td>
<td>Nurses Home</td>
<td>72</td>
</tr>
<tr>
<td>16</td>
<td>BLMEP Site location and context</td>
<td>73</td>
</tr>
<tr>
<td>17</td>
<td>Annual wind rose for Cape Town for the period January 2012 - December</td>
<td>74</td>
</tr>
<tr>
<td>18</td>
<td>Diurnal wind roses for Cape Town for the period January 2012 - December</td>
<td>75</td>
</tr>
<tr>
<td>19</td>
<td>Total monthly rainfall in Cape Town for the period January 2012 – December</td>
<td>76</td>
</tr>
<tr>
<td>20</td>
<td>Average monthly temperatures and humidity in Cape Town (Jan 2012 – Dec 2013)</td>
<td>77</td>
</tr>
<tr>
<td>21</td>
<td>Road Network</td>
<td>80</td>
</tr>
<tr>
<td>22</td>
<td>City of Cape Town Existing Public Transport Services (Source: City of Cape Town)</td>
<td>81</td>
</tr>
<tr>
<td>23</td>
<td>City of Cape Town Formal PT Stops (Source: City of Cape Town)</td>
<td>82</td>
</tr>
<tr>
<td>24</td>
<td>PT Stops along Forest Drive Extension (Source: Google Streetview)</td>
<td>82</td>
</tr>
<tr>
<td>25</td>
<td>City of Cape Town Local Metrorail network – diagrammatical (Source: PRASA)</td>
<td>83</td>
</tr>
<tr>
<td>26</td>
<td>North-South corridor railway link (Source: City of Cape Town)</td>
<td>84</td>
</tr>
<tr>
<td>27</td>
<td>Option 1D future rail link (Source: PRASA)</td>
<td>86</td>
</tr>
<tr>
<td>28</td>
<td>CITY OF CAPE TOWN IRPTN proposed trunk route (Source: City of Cape Town)</td>
<td>87</td>
</tr>
<tr>
<td>29</td>
<td>CITY OF CAPE TOWN IPTN 2032 (Source: City of Cape Town)</td>
<td>88</td>
</tr>
<tr>
<td>30</td>
<td>NMT Infrastructure along Forest Drive Extension (Source: Google Streetview)</td>
<td>89</td>
</tr>
<tr>
<td>31</td>
<td>City of Cape Town NMT Network plan (Source: City of Cape Town)</td>
<td>90</td>
</tr>
<tr>
<td>32</td>
<td>Vehicle and NMT Access</td>
<td>92</td>
</tr>
</tbody>
</table>
Figure 70: Low Level Aerial perspective of Conradie Layout and Building massing .... 148
Figure 71: High level Aerial perspective of Conradie Layout and Building massing .... 149
Figure 72: Examples of Storm water Attenuation .................................................. 151
Figure 73: Landscape Concept Plan ....................................................................... 152
Figure 74: Landscape Section .................................................................................. 153
Figure 75: General Maximum Building Height Conditions .................................. 155
Figure 76: Possible Phasing in order to determine yield (indicative only) ............ 156
Figure 77: Street Interface A .................................................................................... 162
Figure 78: Street interface B .................................................................................... 162

Schedule of Tables

No table of figures entries found.
Table 1: Development Rights and Conditions Applied for ................................... 15
Table 2: Erf Numbers and Title Deeds .................................................................. 18
Table 3: Mixed Uses ............................................................................................... 21
Table 4: Socio Economic Impact During Construction ......................................... 26
Table 5: Socio Economic Impacts during the Operational Phase ......................... 26
Table 6: Comparison of BLMEP goals and Edge Targets ..................................... 27
Table 7: Development Rights and Conditions Applied for ................................... 31
Table 8: Required Transitions for the BLMEP ...................................................... 40
Table 9: CTSDF Policies related to the BLMEP Project ........................................ 47
Table 10: IHSF Program ......................................................................................... 60
Table 11: Zoning use rights ................................................................................... 100
Table 12: Learner enrolments at local schools ....................................................... 119
Table 13: Sporting Facilities in the BLMEP Area .................................................. 121
Table 14: Urban design principles ......................................................................... 131
Table 15: Comparison of BLMEP goals and Edge Targets .................................. 135
Table 16: Development Rights and Conditions .................................................... 154
Table 17: Development Yield ............................................................................... 156
Table 18: Proposed parking .................................................................................. 159
### Acronyms

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIA (Environmental Impact Assessment)</td>
<td>System of analysing and reporting on the impact of activities on the environment to enable decision makers to decide what measures should be taken to mitigate and manage the impacts of the activity.</td>
</tr>
<tr>
<td>FLISP (Finance Linked Individual Subsidy Programme)</td>
<td>Subsidy to enable sustainable and affordable first time homeownership opportunities to South African citizens and Legal permanent residents earning between R3 501 and R15 000 per month (the “affordable” or “gap” market).</td>
</tr>
<tr>
<td>Gap Housing</td>
<td>Creation and promotion by the government of housing opportunities, in partnership with the private sector, for people earning a combined monthly income between R3 501 and R17 500</td>
</tr>
<tr>
<td>HSDG (Human Settlement Development Grant)</td>
<td>Facilitates the creation of sustainable human settlements that enable improved quality of household life</td>
</tr>
<tr>
<td>INEP (Integrated National Electrification Programme)</td>
<td>Provides capital subsidies to municipalities to address the electrification backlog of permanently occupied residential dwellings. Department of Energy (DOE) funded</td>
</tr>
<tr>
<td>NID (Notification of Intent to Develop)</td>
<td>A form used to apply for the development of land when heritage impacts require assessment and approval</td>
</tr>
<tr>
<td>NMT (Non-motorised Transport)</td>
<td>All forms of transport that are human or animal powered. Examples include walking, cycling, rollerblading, skateboarding, rickshaw riding and horse riding</td>
</tr>
<tr>
<td>SHI (Social Housing Institutions)</td>
<td>Entities formed to own the property, undertake the development of social housing projects, facilitate and manage the properties, collect rentals and repay any loans secured to develop the units</td>
</tr>
<tr>
<td>Social Housing/Rental</td>
<td>Rental housing for people who earn between R1 500 and R7 500 per month. These homes usually take the form of apartments. Funding is provided by National Government’s Social Housing Subsidy</td>
</tr>
<tr>
<td>TIA (Traffic Impact Assessment)</td>
<td>The assessment of the impact of a proposed change in land use on the transportation system</td>
</tr>
<tr>
<td>TOD (Transit-Oriented Development)</td>
<td>Mixed use residential and commercial area designed to maximize access to public transport. It is regional planning, city revitalization, suburban renewal and walkable neighbourhoods combined</td>
</tr>
<tr>
<td>Term</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>USDG (Urban Settlement Development Grant)</td>
<td>Grant to support the development of sustainable human settlements and improved quality of life for households through accelerating the provision of serviced land with secure tenure for low-income households, by supplementing municipal resources</td>
</tr>
<tr>
<td>WULA (Water Use Licence Application)</td>
<td>Application for using water or expand the existing use of water on a site</td>
</tr>
</tbody>
</table>
1 Introduction

The Conradie Better Living Model Exemplar Project (BLMEP) seeks to redress the apartheid spatial planning legacies and establish key, replicable methods to unlock other well located state properties. The project aims to develop a desirable, integrated, secure, affordable and sustainable neighbourhood close to the City where people can live, work, play and learn.

The Conradie site was selected by the Inter-Governmental Committee as the preferred location for the development and implementation of the BLMEP. The success of the exemplar project will pave the way for replicating the Better Living Model for future projects.

The project terms of reference expects that the project will be driven “with speed, in an action oriented manner.” This implies that, although development of the project is a long-term commitment and subject to all applicable statutory approvals, a Business Unusual approach must prevail supporting accelerated enablement and delivery through focussed inter-governmental cooperation that must result in the start of construction or “sod-turning” before 1 April 2018.

This document consists of two parts:

1 Part 1: the Land Use Application
2 Part 2: The Development Framework
2 Part One: Land Use Application

2.1 Purpose

The purpose of this application is to obtain the relevant land use approvals to rezone to sub-divisional area, subject to certain conditions. This is to enable the Developer of the project to submit Site Development Plans and Subdivision Applications in future, which will be approved by the Local Authority, provided they are consistent with the Statutory Approvals resulting from this Application and the Development Framework Guidelines contained within the Development Framework.

2.2 Application Scope

Simultaneous application is hereby made: in terms of section 42 (a) rezoning, 42 (b) permanent departures, 9(d) subdivision and 9(f) consolidations of the City of Cape Town Municipal Planning By-law, 2015 for:

1. Erven 112657 remainder
2. Erf 112656 remainder
3. Erf 158773, Cape Town
4. Closure of Public Place for Erf 158773

2.3 Application Details

The application details are as follows:

1. In terms of section 42 (a), the application is to rezone from Limited Use to Subdivisional Area, for subsequent subdivision and rezoning to Mixed Use Sub zoning 2 (MU2), Open Space Zoning 3: Special Open Space (OS3), Transport Zoning 2: Public Road and Public Parking (TR2), as applicable.

2. In terms of section 42 (b), the application is for permanent departures from the Conventional Parking requirements (Schedule 3, City of Cape Town Development Management Scheme (s 25(1)(a)), sections 137 – 139), to allow a parking ratio of 0.25 bays per Grant Funded Residential unit and 0.75 bays per unit for all other residential units (in lieu of 2.0 bays) and 4 bays per 100m2 for Retail and Office, with 90% of bays shared with residential (in lieu of 4 bays per 100 GLA for offices/retail standalone.)

3. In terms of section 42(d) and 42(f), the application is to subdivide and consolidate certain portions of Erf 112657 Remainder with Erf 112656 remainder in order to create a more regular shape for the Orthotic and Prosthetic Centre. In addition, to consolidate Erf 158773 with Erf 112657 Remainder in response to the realignment of the existing canal currently on Erf 158773, which will be realigned to run through Erf 112657.
4. For the closure of public place on Erf 158773, which is currently a canal in terms of the City of Cape Town: Immovable Property By-Law, 2014 section 4 (2). The Canal will be realigned and this land redeveloped for mixed-use purposes.

2.4 Development Rights and Conditions

1. Part 1 of this document sets out the Land Use Application and Motivation of Desirability.

2. Part 2 describes:
   1. The Vision for the Development within the physical context
   2. Overall policy environment
   3. Broad goals
   4. An illustration of the preferred Development Concept
   5. Development principles and guidelines for the development
   6. The possible range of uses
   7. General spatial distribution of uses
   8. Major transport and pedestrian linkages
   9. Infrastructure

10. Any limits within the development, including but not limited to, density and floor space, are proposed

This application is for a basket of development rights for the entire site. The specific subdivision and applicable zoning rights will be applied for by the developer through subsequent site development and subdivision plans. Thus, the rights would be drawn down, as and when the particular conditions of approval set by the City are met.

The building plans will be submitted for approval in terms of the approved SDP and subdivision plans as indicated in Table 1.
Table 1: Development Rights and Conditions Applied for

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rezoning to Sub divisional Area with a Sub divisional Area Overlay Zoning (SOA) in terms of Sections 153 and 154 of Schedule 3, City of Cape Town Development Management Scheme (s25(1)(a)).</td>
<td>All land in the consolidated site resulting from consolidation of Erf 112657 Remainder with Erf 158773 and portions of Erf 112656</td>
</tr>
<tr>
<td>Primary, Additional and Consent uses and other provisions of Mixed Use sub zoning 2 (MU2) to be allowed for in SOA.</td>
<td>Applicable to all future land unit subdivisions intended for building development</td>
</tr>
<tr>
<td>Primary, Additional and Consent Uses and other provisions of Transport Zoning 2 (TR2) to be allowed for in SOA.</td>
<td>Applicable to Road reserves to be transferred to City of Cape Town, specifically the Class 4 Access route from Forest Drive Extension to Odin Road Extension and maybe other roads as determined in the future subdivision applications.</td>
</tr>
<tr>
<td>Primary, Additional and Consent Uses and other provisions of Open Space Zoning 3 (OS3) to be allowed for in SOA.</td>
<td>Applicable to land units designated for Open Space such as the Elsieskraal River Park and other smaller parks to be determined in future subdivision applications</td>
</tr>
<tr>
<td>Floor Area</td>
<td>Maximum 350 000m²</td>
</tr>
<tr>
<td>Education Facilities</td>
<td>2 Schools each capable of accommodating 1000 students to be provided as part of development simultaneous with phased development.</td>
</tr>
<tr>
<td>Sports Facilities</td>
<td>1 Sports Facility including at least 1 full size football field and an indoor multi-purpose Sports facility must be provided before over 1800 residential units are approved.</td>
</tr>
<tr>
<td>Proportion of Residential and other Land Uses</td>
<td>No more than 20% of floor space to be for uses other than Residential</td>
</tr>
<tr>
<td>Maximum Number of Residential units</td>
<td>3605</td>
</tr>
</tbody>
</table>
| Reduction in Parking Provision ratios from Conventional as follows:         | Grant Funded Housing - 0.25 bays per unit  
|                                                                            | Private Housing – 0.75 bays per unit  
|                                                                            | Retail/Service Industry – 4 bays per 100m², shared 90% with residential  
|                                                                            | Office – 4 bays per 100m², shared 90% with                                      |
Heights of buildings to be in accordance with Figure 1 below

Generally the maximum height of buildings in Central Precinct to be up to 16m in height, around the Perimeter of the site 25m and in-between the two, 13m except where shown on Figure 1 below.

Building Setback Maximum for Residential buildings on street boundaries

Setback of Maximum of 3.0 metres (between 0.0 and 3.0m along at least 80% of the street boundary of a site with residential uses)

Figure 1: General Maximum Building Height Conditions
2.5 Property Details

2.5.1 The Applicant

The Western Cape Government: Department of Transport and Public Works is the applicant and has appointed Ignis Finance and Property Solutions to undertake the development planning. ARG Design is a sub consultant Ignis Finance and Property Solutions, fulfilling the role of Urban Designer and Town Planner.

A Power of Attorney from Western Cape Government and City of Cape Town has been attached as Annexure A.

2.5.2 Property Description

The Conradie BLMEP property is located between Pinelands, Maitland, Goodwood, Thornton and Epping Industria 1. The property boundaries are formed by Forest Drive Extension to the north, Metro Rail’s central line adjacent to Jan Smuts Drive to the west, the canalised Elieskraal River to the south-east and the Pinelands Jewish Cemetery to the east, as illustrated in Figure 2.
2.5.3 Erf numbers and zoning

The Conradie BLMEP Site is located mainly upon parent erf 112657. Remainder. The Orthotic and Prosthetic Centre is located upon remainder Erf 112656 (See Table 2 below and Figure 3.) The Canal site is located upon Erf 158773, Cape Town.

The zoning of the current erven 112657 and 112656 is given as Limited Use, according to the City of Cape Town Zoning viewer website. A transitional mechanism, the LU zoning, deals with land that was zoned as undetermined in previous zoning schemes and limits development to existing lawful uses only.

The canal, which is located upon Erf 158773, is currently zoned for Open Space 2.

2.5.4 Title Deeds and Conveyancing Certificate

Table 2: Erf Numbers and Title Deeds

<table>
<thead>
<tr>
<th>Erf Number</th>
<th>Extent (m²)</th>
<th>Title deed</th>
<th>Current land use</th>
<th>Current Zoning</th>
<th>SG Status</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erf 112657 Rem</td>
<td>221475</td>
<td>G45/1942 Reg19420 619</td>
<td>Vacant (Old Conradie Hospital site) as well as current access to OPC.</td>
<td>Limited Use</td>
<td>Approved</td>
<td>Rezoning to Subdivisional Area Overlay. Consolidation with Erf 158773. Portion subdivision and consolidation with erf 112657 remainder.</td>
</tr>
<tr>
<td>Erf 112656</td>
<td>14790</td>
<td>T8153/968</td>
<td>Current OPC</td>
<td>Limited Use</td>
<td>Approved</td>
<td>Realignment of boundaries as per subdivision plan.</td>
</tr>
<tr>
<td>Erf 158773</td>
<td>11286</td>
<td>T20318/19 95 Reg19950 324</td>
<td>Public Place (canal)</td>
<td>Open Space 2</td>
<td>Approved</td>
<td>Consolidation with Erf 112657 and rezoning to Subdivisional Area Overlay.</td>
</tr>
</tbody>
</table>

The conveyancers’ certificate indicates that there are no restrictive title deed conditions that would prevent the development of the sites as described above. The Surveyor Generals Diagram is attached as Annexure B and the Title Deeds are attached Annexure C. The Surveyor General’s diagram indicates that the canal site (Erf 158773) is currently...
designated as a public place. The public place will need to be closed as part of this application.

The letter from the Department of Health supporting the realignment of the Orthotic and Prosthetic Centre site is attached as Annexure D.
Figure 3: Relevant erven
2.6 Proposed Zoning

It is proposed to rezone the site to Sub divisional Area. This will enable the land owner to appoint a preferred developer. The developer will then submit site development plans, subdivision plans and a phasing plan in line with market demands.

The developer will submit plans aligned to this document, which provides the overreaching policy, broad goals, and principles for development within the site. The range of uses, general spatial distribution of uses, major transport and pedestrian linkages, infrastructure and density and floor space limitations is specified in this document.

It is proposed that a zoning of Mixed Use 2 will be used as the baseline zoning for the property, with certain restrictions as specified in this document.

Mixed Use 2 allows for the uses as detailed in Table 3

Table 3: Mixed Uses

<table>
<thead>
<tr>
<th>Mixed use subzone MU2</th>
<th>Floor factor</th>
<th>Coverage</th>
<th>Maximum height above base level</th>
<th>Building lines</th>
<th>Street Centreline setback</th>
<th>Other provisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMARY USES</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business premises,</td>
<td>4</td>
<td>100%</td>
<td>25.0m</td>
<td>0.0 m up to 10.0 m height; 4.5 m above 10.0 m</td>
<td>8.0m</td>
<td></td>
</tr>
<tr>
<td>Industry, Dwelling</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>House, Second Dwelling,</td>
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<td></td>
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<tr>
<td>Boarding House, Flats,</td>
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<tr>
<td>Place of Instruction,</td>
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<td>Place of Worship,</td>
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<tr>
<td>Institution, Hospital,</td>
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<tr>
<td>Place of Assembly,</td>
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<td>Place of Entertainment,</td>
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<tr>
<td>Hotel, Conference Facility,</td>
<td></td>
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<tr>
<td>Authority Use, Utility</td>
<td></td>
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<tr>
<td>Service, Rooftop Base</td>
<td></td>
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<tr>
<td>Telecommunication Station,</td>
<td></td>
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<tr>
<td>Transport Use, Multiple</td>
<td></td>
<td></td>
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<tr>
<td>Parking Garage, Private</td>
<td></td>
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<tr>
<td>Road and Open Space</td>
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<tr>
<td>CONSENT USES</td>
<td></td>
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<tr>
<td>Adult Shop, Adult</td>
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</table>
2.7 Proposed Consolidation and Subdivision

Figure 4 indicates the proposed subdivision and consolidation of the site in order to create the developable area for the development.

Figure 4: Proposed subdivision and consolidation
2.8 Motivation and Desirability

2.8.1 Development proposal

The main elements of the development concept comprise:

1 A residential-led mixed use, mixed income development, staged over a minimum of five years, including 3605 residential units, retail, service industry, office, sports, education, health and other facilities required in an integrated settlement.

2 Location of recreation, sporting and storm water attenuation on the southern edge of the site, with a deviated storm water canal running through the site. This includes the consolidation of the current canal site with the old Conradie Hospital site.

3 An internal greenbelt/pedestrian green system along the canal and within the precinct.

4 The extension of Odin Road through to Voortrekker Road, to provide additional access to the site and surrounding neighbourhoods.

5 Two access points off Forest Drive. One of these is a new access point, across the road from the current entrance to Anfield Apartments. The other new access, to the south, connects with Odin Road extension.

6 The Orthotic and Prosthetic Centre (OPC) will take access, internally, through the site. An adjusted erf boundary will provide better access to the site and allow for additional development on the OPC site. The current triangular shape, is very restrictive.

7 The creation of a pedestrian pathway adjacent to the existing railway line, west of the site. This will link, via an NMT route, to the Mutual Station. The improved NMT facilities will also link Thornton Station, which is equidistant from the site.

8 The adaptive reuse of the heritage structures as community facilities (hall and community offices).

9 An architectural response to the heritage buildings and triangular road layout which respects the value created by these structures.

2.8.2 Desirability

The Conradie BLMEP seeks to redress the apartheid spatial planning legacies and establish key, replicable methods to unlock other well located state-owned properties. The project aims to develop a desirable, integrated, secure, affordable and sustainable neighbourhood close to workplaces and other opportunities available in the inner City where people can live, work, play and learn.
This medium density development will optimise the use of public transport systems and be consistent with the Transit Oriented Development paradigm that is a core policy pursued by City of Cape Town to redress urban sprawl.

2.8.3 Compatibility with policy and planning frameworks.

The proposal is entirely compatible with the principles and planning frameworks for the area.

1 It should be noted that the two development corridors (Northern and Metro South East) identified in the Built Environment Performance Plan converge near the Conradie BLMEP site. The corridors have been identified as areas where intensification of development should occur.

2 The District plan refers directly to the Conradie BLMEP site as a strategic site to allow for a medium to high density mixed use neighbourhood with a significant Inclusionary housing component and employment opportunities. It also mentions the need to link the open space provision in the precinct to the revitalisation of the Elsieskraal River Canal. (Annexure E provides a summary of the relevant planning frameworks.)

2.8.4 Compatibility with surrounding land uses.

The site is largely isolated from the surrounding area as it is flanked by the Langa Railway line, the Elsieskraal River Canal, and the Orthopaedic Centre/New Jewish Cemetery. These act as barriers to access to the site on three sides. It is only along Forest Drive Extension that the site currently interfaces with a public road.

The tallest buildings will be located adjacent to the existing Orthotic and Prosthetic Centre, to the east of the site (± 8 floors), and will wrap around the southern and western edge of the site (4 - 8 floors). This is to fully take advantage of the views to the west as well as to respond to the hard edges created by the rail infrastructure. The buildings will reduce in height towards the centre, in response to the heritage buildings. The intention is to make the centre of the site a pedestrian priority space.

The surrounding developments face away from the site, with primary views being away from the site and backyard views being towards the site. The land use proposed across Forest Drive is for a medium density residential development at Mupine, which is both a compatible and desirable use and will complement the proposed uses at the BLMEP site.

The largest impact will be on the Jewish Cemetery and the Odin Road residential precinct to the east and south of the site. The tall buildings originally proposed to overlook the cemetery have been reduced in height to 4 floors in response to the VIA. (See Appendix F: Visual Impact Assessment contained within Heritage Impact Assessment) and also Figure 5.
2.8.5 Socio-Economic impact

A full Socio-Economic Impact Assessment has been completed for the site. As detailed in Table 4 and Table 5 the development will have a R2.71 billion impact on GGP during the construction phase and R938 million during the operational phase. The development will have a R6.61 billion impact on production/NBS during the construction phase and R2.43 billion during the operational phase.

The construction, manufacturing and real estate and business services sectors were identified as the main beneficiaries during the construction phase.

During the operational phase, the sectors that have been identified as the main beneficiaries are the real estate and business services, manufacturing and financing sectors.

The development will have a positive impact on the local and regional economies. From the econometric model, it was determined that there would be a significant injection of capital into the economy and therefore positive resulting effects on the production levels and GGP.
Table 4: Socio Economic Impact During Construction

<table>
<thead>
<tr>
<th>Impact on:</th>
<th>Direct (Construction)</th>
<th>Indirect (Suppliers)</th>
<th>Induced (Salaries &amp; Wages)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production (@ 2016 prices)</td>
<td>R2.31 billion</td>
<td>R2.95 billion</td>
<td>R1.35 billion</td>
<td>R6.61 billion</td>
</tr>
<tr>
<td>GGP (@ 2016 prices)</td>
<td>R517 million</td>
<td>R1.06 billion</td>
<td>R542 million</td>
<td>R2.71 billion</td>
</tr>
<tr>
<td>Jobs</td>
<td>1 806</td>
<td>5 869</td>
<td>1 868</td>
<td>9.543</td>
</tr>
<tr>
<td>HH Income (@ 2016 prices)</td>
<td>R301 million</td>
<td>R487 million</td>
<td>R218 million</td>
<td>R1.01 billion</td>
</tr>
</tbody>
</table>

Table 5: Socio Economic Impacts during the Operational Phase

<table>
<thead>
<tr>
<th>Impact on:</th>
<th>Direct (construction)</th>
<th>Indirect (suppliers)</th>
<th>Induced (salaries &amp; wages)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production per year (@ 2016 R-values)</td>
<td>R1.02 billion</td>
<td>R854 million</td>
<td>R553 million</td>
<td>R2.43 billion</td>
</tr>
<tr>
<td>GGP per year (@ 2016 R-value)</td>
<td>R316 million</td>
<td>R398 million</td>
<td>R224 million</td>
<td>R938 million</td>
</tr>
<tr>
<td>Jobs per year</td>
<td>1 527</td>
<td>1 714</td>
<td>1 063</td>
<td>4 304</td>
</tr>
<tr>
<td>Household Income per year (@ 2016 R-values)</td>
<td>R112 million</td>
<td>R158 million</td>
<td>R90 million</td>
<td>R360 million</td>
</tr>
</tbody>
</table>

Considering the status quo of employment and skill levels in the study area and the employment opportunities generated from the econometric model, it is evident that the Conradie BLMEP will have a positive effect on employment in the long-term. While the construction phase jobs are temporary, it offers important skills development opportunities that may assist workers with future employment opportunities. The operational phase will have a positive impact on sustainable job creation for the local community.

From the model, it was calculated that the development will result in a R1.01 billion impact on household income during the construction phase and R360 million during the operational phase.
2.8.6 Impact on biophysical environment.

The Conradie BLMEP site does not currently form an integral part of a sensitive ecosystem. Although it is located adjacent to the Elsieskraal River Canal, this is a highly disturbed system and is fully canalized.

2.8.7 Impact on Sustainability

The targets that will be met for the BLMEP are illustrated in Table 6:

Table 6: Comparison of BLMEP goals and Edge Targets

<table>
<thead>
<tr>
<th>Zone</th>
<th>BAU Demand</th>
<th>Sustainable Practices Demand</th>
<th>% Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>Residential (3600 Units)</td>
<td>10800 Kl/D</td>
<td>4320 Kl/D</td>
</tr>
<tr>
<td>Electricity</td>
<td>Residential (3600 Units)</td>
<td>77 612 Kwh/D</td>
<td>36 089 Kwh/D</td>
</tr>
</tbody>
</table>

The site offers many opportunities for implementation of green technologies and the minimum target of a 30% reduction in the use of water and energy is achievable.

The key sustainability impact of the site is a holistic one- by virtue of its location and the potential to house more than 12 000 people in a high density, high quality space, with good access to non-motorised transport, recreational and social facilities, the site will provide a benchmark in sustainability, as defined by the OECD.

2.8.8 Traffic Impact

A full Traffic Impact Assessment has been conducted for the site there are no known latent developments in the study area with development rights that will have an impact on the road network. The proposed Old Mutual Mupine residential development along Forest Drive Extension will be located directly north of the site. The future of this development is not confirmed and its latent traffic was not considered.

While the development is well located, access to the major road network is constrained due to the Elsieskraal River canal, railway lines and the Maitland cemetery.

The road network in the vicinity of the site is severely constrained, and has been for many years. The weekday AM peak is the most critical period.

Access to the major road network will be improved with the proposed Odin Road Extension from Viking Way to Voortrekker Road.
The EMME model found that a 2-phase implementation of the Odin Road Extension will be sufficient to support the phased development approach.

Local access to the site will be via 2 signalised accesses off Forest Drive Extension and the Odin Road Extension over the canal. A non-motorised access will also be provided to Thor Circle.

Access spacing along Forest Drive Extension will be sub-standard, however a progression analysis confirms that sufficient progression of over 30% will be possible during the weekday AM peak. This is subject to the final intersection signal timing plans.

The proposed parking provision for the site is lower than the current City of Cape Town zoning scheme specifications. A departure for reduced parking provision forms part of this application.

The reduced parking is motivated in terms of a Transit Oriented Development, proximity to rail and bus transport, as well as the social housing component of the development.

Shared parking between the residential and non-residential land-uses is possible due to the urban design of the development. The on-street parking provision along the new internal road network will form part of the total parking supply.

The site will not have a rail station at its centre, however the bulk of the development will be located within an 800 m walking radius of the Mutual Station and the Thornton Station. The Conradie BLMEP site will be served by Metrorail’s Central Line, Northern line and Boland (Paarl) and Northern (Strand) Business Express services, via Mutual Station. The station provides direct access to the majority of Metrorail’s’ destinations, as it is a junction station located on multiple lines. It is the second busiest station in the Western Cape Town Station.

As per the CITP (2014 mini review), the long-term strategy of TCT is to provide public transport services to 80% of Cape Town’s residents within 500 m. The Conradie BLMEP will be located directly adjacent to Forest Drive Extension, a current and future public transport route, and all residents will be within 500 m of this service.

A future IRT feeder route is planned along Forest Drive Extension, and envisaged stops, adjacent to the site, will provide additional public transit opportunities in close proximity to the Conradie BLMEP development. Two, future IRT trunk services will be located along Jan Smuts Drive and will be accessible either directly from the site or via the feeder service that will operate along Forest Drive Extension.

The development of the Conradie BLMEP may see the establishment of additional bus or IRT routes to and from or via the site. The provision of a public transport stops and a facility within the site will be considered by the developer in-line with TCT policies.

The urban design layout will provide and promote Non-motorised transport facilities and usage.
It is concluded that the proposed local intersection upgrades and major road infrastructure provision for the Conradie BLMEP will mitigate the traffic impact of the development where possible. The existing congestion at the majority of the affected intersection can however not be resolved. It is also recommended that the signal timing plans at all the affected intersection be reviewed after the completion and occupation of each development phase.

2.8.9 Heritage and Visual Impact

Full Heritage and Visual Impact Assessments were conducted for the site, based on the requirements of Heritage Western Cape (HWC) and have been submitted for public review, in terms of the NID (Notice of Intention to Develop) process.

The primary recommendations regarding the Heritage Buildings and other heritage features are that:

1. The future re-development of the site must provide for the retention of the structures within the "gateway precinct" and the detail design thereof must conform in principle with the proposals indicated in the HIA report.

2. The mitigation measures to limit the visual and noise impact on public spaces must be implemented.

While the Heritage Impact Assessment is limited to the Conradie BLMEP site, Potential impacts pertaining to the scale, height and massing of new buildings relative to the heritage buildings in the Gateway Precinct were assessed through the Visual Impact Assessment (VIA).

1. Potential visual impacts on the Jewish cemetery adjoining the site are mitigated by the fact that the cemetery does not face the site and the existing Orthotics and Prosthetics Centre is situated between the Conradie site and the cemetery.

2. The future tall buildings in the south west corner of the site may have some visual impact but this will not detract from the heritage significance of the cemetery, including its intrinsic and associational attributes.

3. There is no heritage principle that precludes the possible event of cemeteries being overlooked, however unintended, and cemeteries have almost always been integral to urban areas.

2.8.10 Engineering/Services Impact

The impact assessments were based on the Concept design as presented in the engineering services report (attached as Annexure G). This is a residentially led design with accommodation for >12 000 people plus supporting facilities such as schools, clinics and commercial (work and retail) space.
Extensive interactions took place with City, Provincial and National authorities to determine the availability of services (current and planned) as well as projected competitive off-takes and licensing requirements.

**2.8.10.1 Storm water:**

1. The diversion of the canal and additional storage space created through this development will have a positive effect on the existing surrounding storm water infrastructure. The City and Department of Water and sanitation have both agreed that they support the intended storm water measures.

2. The existing canal will only be removed once the new canal and diversion canals are fully constructed, therefore the existing storm water scenario will not be worsened at any stage.

**2.8.10.2 Potable Water**

1. City of Cape Town have indicated that there is sufficient capacity to supply the site. There is the possibility of inadequate supply, in the long-term, as no provision has been made for estimated influx. This is owing to competition from other large developments such as Mupine. There are a number of large scale projects poised for development that may offer similar land uses and compete for service requirements.

2. Insufficient water pressure was previously experienced on site and therefore the Conradie Hospital installed water towers. This can now be rectified with a new/correctly sized connection to the municipal bulk supply which will increase the water pressure.

**2.8.10.3 Waste Water/ Sewage Reticulation**

1. With the increased capacity of the municipal sewer, on-site storage is not necessary and the future volumes can be accommodated with the new line to the Athlone Wastewater Treatment facility.

**2.8.10.4 Electricity**

1. A main substation located close to the site has sufficient capacity to accommodate the expected load from the development.

**2.8.11 Land use planning recommendations**

It is recommended that the Application for Rights with Conditions as set out in Table 7 be approved.

It is further recommended that the Services, Heritage and Transport recommendations specified below in 2.8.12, 2.8.13 and 2.8.14 also be approved.
### Table 7: Development Rights and Conditions Applied for

<table>
<thead>
<tr>
<th>Development Rights and Conditions</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rezoning to Sub divisional Area with a Sub divisional Area Overlay Zoning (SOA) in terms of Sections 153 and 154 of Schedule 3, City of Cape Town Development Management Scheme (s25(1)(a)).</td>
<td>All land in the consolidated site resulting from consolidation of Erf 112657 Remainder with Erf 158773 and portions of Erf 112656</td>
</tr>
<tr>
<td>Primary, Additional and Consent uses and other provisions of Mixed Use sub zoning 2 (MU2) to be allowed for in SOA.</td>
<td>Applicable to all future land unit subdivisions intended for building development</td>
</tr>
<tr>
<td>Primary, Additional and Consent Uses and other provisions of Transport Zoning 2 (TR2) to be allowed for in SOA.</td>
<td>Applicable to Road reserves to be transferred to City of Cape Town, specifically the Class 4 Access route from Forest Drive Extension to Odin Road Extension and maybe other roads as determined in the future subdivision applications.</td>
</tr>
<tr>
<td>Primary, Additional and Consent Uses and other provisions of Open Space Zoning 3 (OS3) to be allowed for in SOA.</td>
<td>Applicable to land units designated for Open Space such as the Elsieskraal River Park and other smaller parks to be determined in future subdivision applications</td>
</tr>
<tr>
<td>Floor Area</td>
<td>Maximum 350 000m²</td>
</tr>
<tr>
<td>Education Facilities</td>
<td>2 Schools each capable of accommodating 1000 students to be provided as part of development simultaneous with phased development.</td>
</tr>
<tr>
<td>Sports Facilities</td>
<td>1 Sports Facility including at least 1 full size football field and an indoor multi-purpose Sports facility must be provided before over 1800 residential units are approved.</td>
</tr>
<tr>
<td>Proportion of Residential and other Land Uses</td>
<td>No more than 20% of floor space to be for uses other than Residential</td>
</tr>
<tr>
<td>Maximum Number of Residential units</td>
<td>3605</td>
</tr>
<tr>
<td>Reduction in Parking Provision ratios from Conventional as follows:</td>
<td>Grant Funded Housing - 0.25 bays per unit Private Housing – 0.75 bays per unit Retail/Service Industry – 4 bays per 100m², shared 90% with residential Office – 4 bays per 100m², shared 90% with</td>
</tr>
</tbody>
</table>
2.8.12 Services Recommendations

1. A master storm water management plan will be required for the development as a whole prior to approval of SDP and sub-divisions.

2. The Engineering Services requirements for each SDP and sub-division Application are to be assessed by the relevant Services Branch of City of Cape Town.

3. Electrical sub-station locations and requirements to be confirmed with each SDP and Sub-division Application.

2.8.13 Heritage Recommendations

1. The future re-development of the site must provide for the retention of the structures within the "gateway precinct" and the detail design thereof must conform in principle with the proposals indicated in this report.

2. An information display on the history of the site must be incorporated into the development.

3. The mitigation measures to limit the visual and noise impact on public spaces, particularly the Jewish Cemetery, as described in Section 5.3 of the VIA must be implemented.

4. Trees that are considered worth saving must be kept and protected during construction.

5. Any alterations or renovations to the existing heritage buildings including adaptive re-use must be done in a sympathetic manner and an architect with heritage experience must be appointed to supervise the works.

6. The widening of the existing gateway opening, with the western-most pier to be rebuilt in a position to the west of the existing one, must take into account the existing...
architectural treatment of the boundary wall. Records must be made of the existing gateway elements prior to demolition and rebuild.

7 A Landscape Plan must be prepared for the development.

8 The services of an archaeologist must be retained for the development. In the event of the discovery or excavation of any human remains, the archaeologist must be immediately notified before any further work or excavation takes place.

9 The Department of Public Works and Transport must ensure that the heritage buildings are properly secured to prevent any further vandalism and undertake essential maintenance, particularly waterproofing, to prevent further damage to heritage fabric.

2.8.14 Transport Recommendations

1 It is recommended that the proposed urban design layout including the accesses, internal road layout, intersections and cross-sections; and NMT provision be approved.

2 It is recommended that the 3 shared accesses off Forest Drive Extension and Odin Road Extension.

3 It is recommended that a reduced parking provision ratio be approved, and that shared parking between residential and non-residential land-uses be allowed, namely:

   1 Grant funded housing - 0.25 bays per dwelling unit
   2 Open-market housing - 0.75 bays per dwelling unit
   3 Offices/service industry - 4 bay / 100 m² GLA (90% shared parking)
   4 Retail - 4 bay / 100 m² GLA (90% shared parking)

4 It is recommended that parking management be implemented as part of the developer responsibilities and future management of the Conradie BLMEP, to ensure the preservation of the NMT urban design focus of the site as well as to ensure unhindered access and mobility to and from the site. This will include paid parking for on-street and off-street bays and management of the shared parking bays.

5 It is recommended that the reduced trip generation rates per land-use be approved. Parking demand management and NMT provision and ongoing promotion will assist to keep the vehicle trip generation rates as recommended.

6 It is recommended that the proposed intersection upgrades be approved. It is also recommended that the access intersection construction and upgrades be implemented for Phase 1 of the development, except for the upgrades related to the future Odin Road Extension and Sipress/Viking intersection. These upgrades will be
required for the ultimate implementation of the Odin Road Extension and full development.

7 It is recommended that the findings and recommendations of the EMME 4 Transportation model be approved.

8 It is recommended that the phased implementation of the Odin Road Extension be approved, subject to the final conceptual design and Transportation report, currently underway.

9 It is recommended that the developer contributions and/or road upgrade cost apportionment be negotiated between the future developer, the City of Cape Town and WCPG.
3 Part 2: Development Framework for the Conradie BLMEP

3.1 Introduction

The Conradie Better Living Model Exemplar Project (BLMEP) seeks to redress the apartheid spatial planning legacies and establish key, replicable methods to unlock other well located state properties. The project aims to develop a desirable, integrated, secure, affordable and sustainable neighbourhood close to the City where people can live, work, play and learn.

The Conradie site was selected by the Inter-Governmental Committee as the preferred location for the development and implementation of the “BLMEP”. The success of the exemplar project will pave the way for replicating the Better Living Model for future projects (See Figure 6).

The project terms of reference expects that the project will be driven “with speed, in an action oriented manner.” This implies that, although development of the project is a long-term commitment and subject to all applicable statutory approvals, a Business Unusual approach must prevail supporting accelerated enablement and delivery through focussed inter-governmental cooperation that must result in the start of construction or “sod-turning” before 1 April 2018.

This Development Framework forms the basis for the Western Cape Government to apply for appropriate zoning, procure a Developer and manage the future development of the Conradie Site. The Framework details the logic and analysis applied to arrive at an Urban Development that is illustrative and provides the basis on which the parameters and conditions specified in the Rezoning Application have been determined. The specific urban form, proportion of land uses, heights, extent of buildings, streets and spaces are not prescriptive but illustrate how the envisaged development could be achieved.

The Framework situates the Conradie BLMEP in its policy and physical context
3.2 Planning and Legislative Context

The following section provides the planning and legislative context relevant to the current application. The policies that have been identified, in the Terms of Reference, as being relevant to the project and will be discussed in this section are:

1. The National Development Plan (NDP)
2. Spatial Planning and Land Use Management Act (SPLUMA)
3. The Medium Term Strategic Framework (MTSF)
4. ONECAPE 2040
5. The Western Cape Provincial Strategic Plan (PSP)
6 The Western Cape Provincial Spatial Development Framework (PSDF)
7 The Cape Town Spatial Development Framework (CTSDF)
8 The Table Bay District Plan
9 The Built Environment Performance Plan (BEPP)
10 Voortrekker Road Corridor Regeneration Program
11 Design and Management Guidelines for a Safer City
12 Gated Development Policy
13 Boundary Walls and Fences Policy (2009)
14 Policy on Minimizing the Impact of Storm water from Urban Development on Receiving Waters (City of Cape Town July 2008)
15 Biodiversity and Alien Vegetation Management Strategies, Frameworks, Policies and Guidelines:
16 Landscape Plan Submission Requirements:
17 City Parks Development Policies (City of Cape Town 2004)
18 Parks Development Policy (City of Cape Town 2015)
19 Cape Town Densification Policy (2012)

3.2.1 National Development Plan (2012)

The National Development Plan is a plan for South Africa to eliminate poverty and reduce inequality by 2030 through uniting South Africans. This means reducing households with a monthly income below R419 (in 2009 prices) from 39% to zero, and moving the Gini coefficient from 0.69 to 0.6. In order to achieve these goals the National Planning Commission (NPC) has identified 10 ‘critical actions’ that need to be undertaken. The six actions that are relevant to the BLMEP Hospital site are:

1 A social compact to reduce poverty and inequality, and raise employment and investment.
2 A strategy to address poverty and its impacts by broadening access to employment, strengthening the social wage, improving public transport and raising rural incomes.
3 Public infrastructure investment at 10 percent of gross domestic product (GDP), financed through tariffs, public-private partnerships, taxes and loans and focused on transport, energy and water.
4 Interventions to ensure environmental sustainability and resilience to future shocks.

5 New spatial norms and standards – densifying cities, improving transport, locating jobs where people live, upgrading informal settlements and fixing housing market gaps.

6 Reduce crime by strengthening criminal justice and improving community environments.

Source:

3.2.2 Spatial Planning and Land Use Management Act (SPLUMA)

SPLUMA provides a framework for spatial planning and land use management in South Africa. SPLUMA:

1 Specifies the relationship between the spatial planning and the land use management system and other kinds of planning;

2 Ensures that the system of spatial planning and land use management promoted social and economic inclusion;

3 Provides for development principles and norms and standards;

4 Provides for the sustainable and efficient use of land;

5 Provides for cooperative government and intergovernmental relations amongst the national, provincial and local spheres of government; and

6 Redresses the imbalance of the past and to ensure that there is equity in the application of spatial development planning and land use management systems.

7 SPLUMA applies to the whole of South Africa (urban and rural areas) and governs informal and traditional land use development processes.

Key development principles and norms and standards include:

1 "Spatial justice" – past spatial and other developments imbalances must be redressed through improved access to and use of land;

2 A Municipal Planning Tribunal cannot be impeded in its discretion on the ground that the value of the land / property is affected by the outcome of the application;
3 "Spatial sustainability" - promote land development that is within the fiscal, institutional and administrative means of South Africa, protect prime and unique agricultural land, comply with environmental laws and limit urban sprawl;

4 "Efficiency" – land development must optimise the use of existing resources and infrastructure and decision making procedures must be designed to minimise negative financial, social, economic or environmental impact; and

5 "Spatial Resilience" - flexibility in spatial plans is accommodated to ensure sustainable livelihoods.

3.2.3 Medium term Strategic Framework (2014)

The Medium Term Strategic Framework (MTSF) ties into the national policies like the NDP and the national governments’ election manifesto. It provides a set of actions to be taken and targets to be achieved by the government within the current electoral term (2014-2019). The actions that are relevant to the BLMEP Hospital site are:

1 Sustainable human settlements and improved quality of household life
2 Responsive, accountable, effective and efficient local government
3 Protection and enhancement of environmental assets and natural resources.
4 Creation of a better South Africa and contribution to a better Africa and a better world
5 A diverse, socially cohesive society with a common national identity

Source:

3.2.4 One Cape 2040 Vision (2012)

Similarly to the National Development Plan (NDP), the provincial One Cape 2040 provides a vision and strategy for society. It does not replace any existing statutory plans required of either province or municipalities.

The vision is to achieve a transition within the next 20-30 years. The following six qualities emerged as key ingredients of the vision to achieve a society that is:

1 Highly skilled – as the basis for both economic competitiveness as well as social progress;
2. Innovation-driven – to solve our challenges and to ensure our economic future in a knowledge era;

3. Resource-efficient - to mitigate environmental and regulatory risk and seize the opportunities of a post-carbon future;

4. Connected – to each other and to the world;

5. High opportunity – as a product of an enabling physical, services and regulatory environment geared to quality living and enterprise.

6. Collaborative – as a key to achieving the required social, economic and environmental impact required.

The six qualities have been further unpacked to describe the required transitions. The four qualities that are applicable to the BLMEP Hospital site are listed in Table 8:

**Table 8: Required Transitions for the BLMEP**

<table>
<thead>
<tr>
<th>Transition</th>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic access transition (Working Cape)</td>
<td>Factor and efficiency driven economy with high barriers to entry and low productivity and entrepreneurship rates</td>
<td>Innovation driven economy with low barriers to entry with high productivity and entrepreneurship rates</td>
</tr>
<tr>
<td>Ecological transition (Green Cape)</td>
<td>Unsustainable carbon-intensive resource use</td>
<td>Sustainable low carbon resource use</td>
</tr>
<tr>
<td>Cultural transition (Connecting Cape)</td>
<td>Barriers to local and global connectivity (language, identity, distance, parochial and inward-looking attitudes)</td>
<td>High level of local connectivity and global market fluency</td>
</tr>
<tr>
<td>Settlement transition (Living Cape)</td>
<td>Unhealthy, low access, often alienated, low opportunity neighbourhoods</td>
<td>Healthy, accessible, liveable multi-opportunity communities</td>
</tr>
</tbody>
</table>


3.2.5 Provincial Strategic Plan (Better Living Model) 2014-2019

The Western Cape Government has identified the following five strategic goals. The ambition of the five strategies is to contribute to the realisation of the aims and objectives of the NDP over the five year term between 2014 and 2019 within the Western Cape Province.

The Provincial Strategic Goals are:
1 Create opportunities for growth and jobs: creating an enabling environment to attract investment, grow the economy and create jobs by supporting high growth economic sectors.

2 Improve education outcomes and opportunities for youth development: expanding quality education across the province and providing opportunities for youth to realise their full potential.

3 Increase wellness and safety, and tackle social ills: addressing health, safety and social ills by supporting healthy communities, a healthy workforce, and healthy families, youth and children.

4 Enable a resilient, sustainable, quality and inclusive living environment: improving urban and rural areas through enhanced management of land, an enhanced climate change plan, and better living conditions for all.

5 Embed good governance and integrated service delivery through partnerships and spatial alignment: delivering good governance and an inclusive society that increases access to information, in partnership with active citizens, business and institutions.

All of the strategies are indirectly relevant to the site, with strategy 4 being directly relevant to the site. Within this strategy the BLMEP Hospital site is highlighted as a ‘Game-changer’, which will encompass the principles of the ‘Integrated Better Living Model’. The Integrated Better Living Model enables strategy changes in human settlements underpinned by the development of new market opportunities. The better living model includes:

1 “Live-Work-Play” model: new approaches to using government property to leverage integrated living starting with the BLMEP Site project.

2 “Better Living Challenge” as the platform to enable low-income and poor households to improve their living conditions through an emerging marketplace (emphasis on self-improvement and self-responsibility with government playing an enabling role).


3.2.6 Provincial Spatial Development Framework

Within the Provincial Spatial Development Framework, a range of provincial policies are presented. There is some overlap between the sub-policies. To ensure completeness all the policies that relate most directly to the BLMEP Hospital site have been extracted from the policy document and are listed below:

Policy E3: this policy focuses on revitalizing and strengthening urban space-economies as the engine of growth. Within this policy the following 2 sub policies are directly relevant:
1 E3.5. Existing economic assets (e.g. CBDs, township centres, modal interchanges, vacant and under-utilised strategically located public land parcels, fishing harbours, public squares and markets, etc.) to be targeted to lever the regeneration and revitalisation of urban economies.

2 E3.7. Incentives should be put in place to attract economic activities close to dormitory residential areas, facilitate brownfields development (e.g. mixed use development and densification in appropriate locations), and private sector involvement in the rental and gap housing markets.

Policy S1: Protect, manage and enhance a sense of place, cultural and scenic landscape. Within this policy the following 2 sub-policies are directly relevant:

1 S1.2. Promote smart growth ensuring the efficient use of land and infrastructure by containing urban sprawl and prioritising infill, intensification and redevelopment within settlements.

2 S1.4. Use heritage resources, such as the adaptive use of historic buildings, to enhance the character of an area, stimulate urban regeneration, encourage investment and create tourism opportunities, while ensuring that interventions in these heritage contexts are consistent with local building and landscape typologies, scale, massing, form and architectural idiom.

Policy S2: Improve inter and intra-regional accessibility. Within this policy the following 3 sub policies are directly relevant:

1 S2.1. Built environment investment programs to focus on compacting and connecting urban development (especially along public transport routes), and clustering public facilities along these connections.

2 S2.7. Direct public funding to unlocking well-located land within cities and towns to reduce the operating costs of public transport (as per PLTF)

3 S2.8. Develop a safe public transport system, while emphasising densification and opportunities for the poor to achieve adequate thresholds along all public transport routes and corridors.

Policy S3: Promote compact, mixed use and integrated settlements

1 S3.1. Target existing economic nodes (e.g. CBDs, township centres, modal interchanges, vacant and under-utilised strategically located public land parcels, fishing harbours, public squares and markets, etc.) as levers for the regeneration and revitalisation of settlements.

2 S3.2. Promote functional integration and mixed use as a key component of achieving improved levels of settlement liveability and counter apartheid spatial patterns and decentralization through densification and infill development.
Policy S4: Balance and coordinate the delivery of facilities and social services. This policy may become relevant as part of the proposed land use design process. As part of this design process the need for facilities will need to be assessed based on the desired housing densities.

1 S4.1. Balance sustainable service delivery and equitable access to education and health services

2 S4.2. Apply the principles of space utilization efficiency, multi-functionality and clustering to all facility provision projects

Policy S5: Promote sustainable, integrated and inclusive housing in formal and informal markets.

1 S5.1. Provide a wide choice of housing typologies and tenure options, based on economic, fiscal, and social affordability. Incremental housing development to be pursued, with phased service provision to accelerate housing provision.

2 S5.2. Target housing delivery projects within Integration Zones and Social Housing Restructuring Zones.

3 S5.3. Ensure that all housing delivery projects are founded on principles of sustainability and based on integrated development planning.

4 S5.4. Promote private-sector participation in the gap market to diversify and expand housing delivery options.

5 S5.5. Provide households with the residential environments, mobility and access to opportunities that support productive activities and reduce levels of exclusion from opportunity.

6 S5.6. Increase densities of settlements and dwelling units in new housing projects.

7 S5.8. Promote more mixed-income, mixed-use, inclusionary forms of development through incorporating various scales of economic opportunities within housing projects.

8 S5.11. Achieve a wider range of housing opportunities with regards to diversity of tenure, size, density, height and quality in order to promote a ladder of upward mobility for households to progress as economic circumstances change over time

9 S5.12. Identify, allocate, release and package strategic land parcels for all forms of state-funded rental projects, prioritising the rental market for households with monthly incomes of between R1 500 and R7 500.

3.2.7 CTSDF

The Cape Town Spatial Development Framework was approved by Council as a sectoral component of the IDP in terms of the MSA, on 8 June 2011. The map below show the areas suited to urban and industrial development. The yellow circle shows the location of the BLMEP site. As indicated on the map (refer Figure 7) this site is specified as being potentially developable land in the short to medium.

Figure 7 Extract from the CTSDF: 2015
The CTSDF has three key strategies:

1. Plan for employment, and improve access to economic opportunities
2. Manage urban growth, and create a balance between urban development and environmental protection
3. Build an inclusive, integrated, vibrant city. All three strategies are relevant to the project.

Within each key strategy the following policies are of direct relevance to the BLMEP Hospital site, as illustrated in Table 9:
Table 9: CTSDF Policies related to the BLMEP Project

<table>
<thead>
<tr>
<th>Key Strategy</th>
<th>Policy Statement</th>
<th>Policy Guidelines</th>
</tr>
</thead>
</table>
| Plan for employment, and improve access to economic opportunities             | Policy 3 Introduce land use policies and mechanisms that will support the development of small businesses (both informal and formal) | P3.1 Encourage large commercial developments to:  
  • make provision for trading spaces for small businesses (formal and informal);  
  • consider a mixed package of land use rights to leverage the provision of informal trading space and facilities in private developments; and  
  • establish a functional and accessible, pedestrian-friendly interface between formal and informal activities.  
P3.2 Local plans and urban upgrading initiatives in commercial areas should be encouraged to accommodate the needs of the informal sector i.e. through appropriate urban design. |
| Policy 4 Encourage area specialisation and the development of a diverse, mutually supportive system of economic areas | P4.1 Encourage land use intensification within metropolitan, sub-metropolitan, district and local nodes in line with applicable policies, the relevant zoning scheme and the District SDPs. |                                                                                                                                                 |
| Policy 10 Create a hierarchy of integrated public transport services related to the accessibility grid | P10.1 Regulate land uses in a manner that integrates and supports the IPTN, to maximise utilisation of the network and minimise travel distance and time.  
P10.2 Encourage land use intensification and an appropriate mix of land uses to develop:  
  • along identified activity routes, development routes and activity streets;  
  • at identified nodes;  
  • at key intersections, stations and modal interchanges, especially where opportunities for commercial and other employment-generating land uses exist;  
P10.3 Consider reductions in parking requirements in areas deemed to be well served by public transport in line with applicable policies, the relevant zoning scheme and the District SDPs. |                                                                                                                                                 |
| Policy 13 Include walking and cycling as essential                             | P13.1 When assessing development applications, NMT infrastructure should be considered as an essential component of the IPTN, and prioritised in the following |                                                                                                                                                 |
| components of land use planning | locations:  
• along routes with high pedestrian and cycle volumes;  
• around public transport interchanges (bus and rail) and public facilities, such as schools, clinics, hospitals and parks;  
• along activity routes and activity streets, along development routes, in civic precincts, and in urban and coastal nodes; and  
• where there are sufficiently high pedestrian volumes to warrant the closure of roads, and the creation of pedestrian zones on a permanent basis (such as St George’s Mall), and on a temporary basis (such as the fan walk to Cape Town Stadium). |

**Policy 14** Introduce parking policies to encourage use of the most context-specific and appropriate modal travel choice  

| Parking provision should be guided by the standards prescribed in the CTZS. Departures from the CTZS should be guided by the City’s Parking Policy.  
P14.2 Consider reductions in parking requirements in urban nodes, mixed use areas, development corridors, activity routes, development routes, activity streets and other areas deemed to be well served by public transport in line with the relevant zoning scheme, the District SDPs and other applicable policies.  
P14.3 Encourage building design that provides a landscaped/active street level interface where the provision of ground floor parking cannot be avoided.  
P14.4 Exploit opportunities for underutilised parking areas to be used as park-and-ride facilities where accessible to public transport services.  
P14.5 Encourage the design of parking areas to be sufficiently flexible to allow for conversion of parking areas to alternative uses over time.  
P14.6 All parking areas and transport depots should comply with water-sensitive urban design (WSUD) principles. |

**Policy 15** Reinforce and enhance metropolitan development corridors  

| Support the intensification of land uses in appropriate locations along metropolitan development corridors in line with the relevant zoning scheme, the District SDPs and other applicable policies. |

**Policy 16** Encourage medium to higher-density forms of urban development to locate on or adjacent to activity routes.  

<p>| Encourage mixed land-use intensification on or adjacent to activity routes, development routes and activity streets and around nodes, high order stations and modal interchanges in line with the relevant zoning scheme, the District SDPs and other applicable policies. |</p>
<table>
<thead>
<tr>
<th>development routes</th>
<th>Policy 20 Facilitate urban development and direct the phasing of urban growth through the deliberate and integrated use of planning, infrastructure provision, and the regulatory and fiscal authority of all spheres of government</th>
<th>P20.1 Use Map 5.3 to help determine when it would be appropriate to develop a particular area.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage urban growth, and create a balance between urban development and environmental protection</td>
<td>P22.1 The intensification of all types of land uses, not just residential land uses, should be encouraged, and a better mix of land uses should be supported within the framework of P22.2</td>
<td>P22.2 The determination of the appropriate location, height, scale, form and orientation of a higher-density development in a particular location should be guided by the following: • generic considerations related to the suitability of the area for land use intensification, such as surrounding land use character, access to public transport, proximity to places of employment, services and community/social facilities, proximity to public open space, and infrastructure availability (existing and planned); • the applicable policy frameworks, namely the CTSDF, District SDPs and local spatial plans, density plans, urban design and architectural guidelines; • the spatial locations targeted for different types of densification (see Table 5.5 in the CTSDF report); and • contextual informants related to the development application and its immediate surroundings, such as the natural environment, land use, built and heritage character, sense of place, infrastructure availability and capacity, and socio-economic considerations, should determine the densities appropriate to the specific location.</td>
</tr>
<tr>
<td>Policy 22 Promote appropriate land use intensification</td>
<td>P22.4 A variety of erf and dwelling sizes should be promoted within any one area. On smaller erven, the urban rather than suburban model of development should be encouraged. An urban design framework/plan should be required to guide the densification of larger properties, especially those greater than one hectare.</td>
<td></td>
</tr>
<tr>
<td>Key strategy 3: Build an inclusive, integrated and vibrant city</td>
<td>Policy 30 Promote a culture of sustainable development and living</td>
<td></td>
</tr>
<tr>
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</tr>
<tr>
<td>Policy 30 Promote a culture of sustainable development and living</td>
<td>P30.1 Consider passive solar design principles when assessing building plans and layouts i.e. consider the maintenance of interior thermal comfort throughout the sun’s daily and annual cycles whilst reducing the requirement for active heating and cooling systems. P30.2 Promote green buildings in line with relevant guidelines.</td>
<td></td>
</tr>
<tr>
<td>Key strategy 3: Build an inclusive, integrated and vibrant city</td>
<td>Policy 35 Redress existing imbalances in the distribution of different types of residential development, and avoid creating new imbalances</td>
<td></td>
</tr>
<tr>
<td>Policy 35 Redress existing imbalances in the distribution of different types of residential development, and avoid creating new imbalances</td>
<td>P35.2 Support the development of social housing in Urban Restructuring Zones. P35.3 Promote a range of size, type and cost of housing opportunities, in appropriate locations in new development areas and along development corridors, activity/development routes and activity streets, with good access to economic opportunities, public transport and social facilities.</td>
<td></td>
</tr>
<tr>
<td>Key strategy 3: Build an inclusive, integrated and vibrant city</td>
<td>Policy 37 Encourage public/private partnerships to develop integrated human settlements and diversify housing delivery</td>
<td></td>
</tr>
<tr>
<td>Policy 37 Encourage public/private partnerships to develop integrated human settlements and diversify housing delivery</td>
<td>P37.1 Consider a package of mixed land use rights to leverage the provision of affordable/gap housing in private developments.</td>
<td></td>
</tr>
<tr>
<td>Key strategy 3: Build an inclusive, integrated and vibrant city</td>
<td>Policy 39 Generally support development, rezoning, subdivision and similar applications that promote a greater mix of land uses, people and/or densities</td>
<td></td>
</tr>
<tr>
<td>Policy 39 Generally support development, rezoning, subdivision and similar applications that promote a greater mix of land uses, people and/or densities</td>
<td>P39.1 Support a mix of land uses and higher-density residential development (compliant with area-specific policy frameworks) in appropriate locations in new development areas and along activity routes, development routes and activity streets. P39.2 Carefully consider the impact of developments on the environmental, heritage or scenic characteristics and sense of place of an area.</td>
<td></td>
</tr>
<tr>
<td>Key strategy 3: Build an inclusive, integrated and vibrant city</td>
<td>Policy 40 Ensure that land uses and built form within predominantly residential areas support the daily functioning of those</td>
<td></td>
</tr>
<tr>
<td>Policy 40 Ensure that land uses and built form within predominantly residential areas support the daily functioning of those</td>
<td>P40.1 Carefully consider the compatibility of land uses when assessing rezoning and other applications in predominantly residential areas and at the interfaces of these areas with mixed use nodes and higher land use intensity areas.</td>
<td></td>
</tr>
</tbody>
</table>
Policy 41 Ensure that development proposals provide an adequate and equitable distribution of social facilities, recreational space and public institutions.

| Policy 41 | Ensure that development proposals provide an adequate and equitable distribution of social facilities, recreational space and public institutions.  
P41.2 Encourage the multi-functional use of social facilities, places for cultural practices, recreational spaces and public institutions.  
P41.3 The requirement to provide 1.8ha of POS /1000 persons will remain consistent with Provincial Circular LG/ PB.15/1986 until the City has prepared a recreational open space operational policy or unless this circular is updated by PG:WC. In the interim (Table 5.11 and Table 5.12 in the CTSDF report) will guide the provision, distribution and design of social facilities and recreational spaces. |

Policy 42 Promote good contextual urban design fit, and ordering of the relationship between people, urban space and the environment (built and natural).

| Policy 42 | Promote good contextual urban design fit, and ordering of the relationship between people, urban space and the environment (built and natural).  
P42.2 Consider using the package-of-plans approach for larger developments. |

Policy 43 Identify, conserve and manage heritage resources, including cultural landscapes.

| Policy 43 | Identify, conserve and manage heritage resources, including cultural landscapes.  
P43.1 When making planning and development decisions that affect heritage resources:  
• consider the relevance of social and landscape contexts;  
• ensure that heritage resources are conserved in their authentic state as far as practically possible, to reflect their historical and cultural value;  
• acknowledge the significance of scale when making conservation related decisions and evaluating heritage resources within broader contexts;  
• wherever appropriate, ensure that a place’s character (tangible and intangible) is protected based on its context and scale (rather than protecting the character of individual sites and/or objects only); |

Source:  
3.2.8 Table Bay District Plan

The District plan refers directly to the BLMEP site as a strategic site in order to:

1. Allow for a medium to high density mixed use neighbourhood with a significant housing component and employment opportunities (commercial, light industrial and retail land uses).

2. Link open space provision in the precinct to the revitalisation of the Elsiekraal River Canal.

3. Provide social facilities that can be of benefit to the precinct as well as the adjacent residential areas.

4. Improve road connections to the site by providing new linkages to Voortrekker Road and across the canal to Viking Way.

The Table Bay District Plan has three key spatial strategies:

Strategy 1 - Plan for employment and improve access to economic opportunities: To encourage economic development in accessible areas for both the formal and informal sectors. Actions that are needed based on this strategy and that are related to the BLMEP site are:

1. Maximise corridor opportunities: reinforce concentrations of economic activity along key movement/public transport routes to allow for greater cross-district access to opportunities; (the site is within the Voortrekker Corridor Integration Zone).

2. Intensify development around nodes by promoting mixed use development in nodal locations where clustered social and economic activities are easily accessible in order to facilitate thresholds to support them and to minimise work-related travel.

3. Encourage creation of new economic opportunities at locations with economic viability within the district by carefully considering the location and the form of such activity, as well as encouraging the requisite thresholds/residential development to support them.

4. Allow for mixed use development in proximity to accessible economic centres to facilitate thresholds to support them and to minimise work-related travel.

Strategy 2 - Manage a sustainable form of urban growth and create a balance between urban development and environmental protection: The following actions are relevant to the site:

1. Facilitate the development of vacant public land and infill sites within the urban edge.

2. Focus efforts in shaping the open space system on the quality of open space developed and the functionality of that space, rather than the quantity.
Strategy 3 - Build an inclusive, integrated and vibrant city: Transforming the apartheid city and encouraging more integrated settlement patterns, and also to enhance the qualitative aspects of the urban fabric and the unique aspects of the city and district for its people as well as those that visit the area. The following actions are relevant to the site:

1. Developing integrated settlements where housing is mixed with public facilities, functional open space and economic opportunities must be seen as a guiding principle throughout the district.

2. Maintaining a system of public places throughout the district that provide access to areas of significant amenity, thereby creating spaces for communities to interact.

Spatial Planning Categories relevant to the BLMEP site:

Mixed use intensification: As shown in the maps below, ‘Spatial Development Plan’ and ‘Sub-district 4’, the BLMEP site is identified as a ‘mixed use intensification’ area and an ‘inclusionary housing’ location. This should include:

1. Generally, support mixed use intensification as indicated, subject to any local guidelines and bulk service and transport infrastructure availability.

2. Promote an appropriate interface between these mixed use areas and adjacent residential areas through the use of sensitive design and informed by local level guidance and plans where applicable.

3. Inclusionary housing locations should include (preferably on site) residential units targeted at the gap and/or rental (social housing) market as part of their development. Where contextually appropriate and feasible, a subsidy housing component could be targeted. Partnerships in line with the inclusionary housing provisions as stated in the PSDF should be practiced. Locations close to socio-economic opportunities, such as the BLMEP site, should be the primary focus of these efforts.

4. The Cape Town Spatial Development Framework policies that are listed as being directly relevant to this spatial planning categories are P35, P37, P39 - P43. The detailing of each policy is specified in the Cape Town Spatial Development Framework policy section of this report.

Proposed Connector Route: As shown in the maps (Figure 8 and Figure 9) ‘Spatial Development Plan’ and ‘Sub-district 4’, a ‘proposed connector route’ runs north/south to the east of the site.

1. This intervention could be implemented as a means of improving movement network functionality.

2. The Cape Town Spatial Development Framework policies that are listed as being directly relevant to this spatial planning category are P13, P14 and P16.
Figure 8: Extract from the Table Bay District Plan, 2012
Figure 9: Spatial Development Plan. Extract from the CTSDF, 2012

3.2.9 Built Environment Performance Plan 2015/16 (BEPP)

The BEPP is a requirement of the Division of Revenue Act, 2014 (Act 10 of 2014) and an instrument for compliance and submission purposes infrastructure grants, as we have illustrated in Error! Reference source not found.. It is applicable for the following infrastructure grants related to the built environment of metropolitan municipalities:

1. Integrated City Development Grant (ICDG).
2. Urban Settlements Development Grant (USDG).
3. Human Settlements Development Grant (HSDG).
4. Public Transport Infrastructure Grant (PTIG).
5. Neighbourhood Development Partnership Grant (NDPG).
6. Integrated National Electrification Program Grant (INEPG).

Figure 10: The Relationship of the BEPP to other Plans and Instruments

The relationship of the BEPP to other strategic plans and instruments

With regard to the BLMEP site, the focus of the BEPP is on the refinement of work related to the city’s Urban Network (UN), Integration Zones (IZ) and specifically detailed planning for the implementation of catalytic projects.
To give effect to the spatially targeted and performance-related Integrated City Development Grant (ICDG), the City has identified and endorsed two Integration Zones namely, the Metro South-east Integration Zone and the Voortrekker Road Corridor Integration Zone. They are identified and prioritized, based on the primary public transport linkages that connect emerging urban nodes with established ones. The BLMEP site lies within the Voortrekker Road Integration Zone and borders the Metro South-east Integration Zone, as illustrated in Figure 11.

![Figure 11: Extract from the BEPP, 2015 illustrating the integration zones]
The core objective of the VRC IZSIP is the spatial transformation of the apartheid city through the use of transit oriented development aimed at achieving the following:

1. Improved urban management
2. Mixed use development
3. Mixed income residential
4. Increased dwelling unit density
5. Supportive economic infrastructure
6. High quality public transport provision and accessibility.

Human Settlements planning in relation to the BLMEP Site

The BEPP report summarises the Key message of the draft Integrated Human Settlements Framework (IHSF). The HISF takes the existing housing backlogs as well as the projected future (year 2032) housing needs into account.

Different strategies have been developed to deal with the current backlogs and future housing needs.

One of the strategies is to support higher density affordable apartment unit investment by Social Housing Institutions and Private Developers, specifically around the transport corridors and in priority nodes.

Development of these sites will be achieved through actively encouraging developers through investment incentives, rapid planning and building plan approvals, and special concessions around development contributions. Public land should be made available where relevant.

Additional human settlement interventions are required to secure alternative tenure options and opportunities for lower-income groups in relation to the emerging economic and public transport networks and infrastructure.

The potential development yield from the BLMEP site is considered to be substantial. Its extent also provides the opportunity for cross-subsidisation of income groups.

Table 10 extracted from the BEPP report (2015: 80), summarises the housing program (5) that relates most closely to supporting high-density housing development in transport corridors and priority nodes.
Table 10: IHSF Program

<table>
<thead>
<tr>
<th>Programme 5: Supporting Higher Density Development in Transport Corridors and Priority Nodes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target households</strong></td>
</tr>
<tr>
<td><strong>Status in relation to Housing Code</strong></td>
</tr>
<tr>
<td><strong>Number of households in category</strong></td>
</tr>
<tr>
<td><strong>Number of households assisted through programme</strong></td>
</tr>
<tr>
<td><strong>Households in income category ≤ R3 200 assisted</strong></td>
</tr>
</tbody>
</table>

**Key assumptions**
- 10% of households in the R3 201-R5 400 income category receive subsidised social rental (SHRA) at a density of 125 units/ha and 20% receive formal small landlord residential rental (boarding house) with an incentive.
- 20% of households in the R6 401-R13 000 income category receive privately developed residential rental apartments at an assumed density of 80 units/ha.

**Estimated programme cost**
- Total cost: R5.55bn
- City's contribution: R 0.97bn
- Other state (FLISP and SHRA): R0.84
- Households' contribution: R 0.08bn
- Private sector contribution: R3.73bn

**Programme dependencies**
- Private sector investment in rental accommodation in the development corridors and priority nodes encouraged through:
  - Revisions to zoning and planning requirements offering higher yields tied to key delivery outcomes in terms of housing mix, etc.
  - Improving the process of providing planning permission.
  - Reduction of the development contributions.
  - Investigation undertaken to offering a rates incentive.
- Specific investment made into a limited number of social housing projects in key areas (a mix of portfolio or project approach can be adopted).

3.2.10 Voortrekker Road Corridor Regeneration Framework (Beta edition March 2014)

This document is the initial Beta Version of the Regeneration Framework by the Greater Tygerberg Partnership, which is the fourth step in the Future Tyger public conversation about the Voortrekker Road Corridor (VRC) and the Bellville Central Area.

The 2040 vision for the Voortrekker Road Corridor: By 2040 a regenerated and interconnected Voortrekker Road Corridor will link Cape Town’s two metropolitan nodes with the city at large and it’s regional hinterland to play a dynamic role as an innovation and development powerhouse in Cape Town’s transition to achieving its 2040 vision of becoming “one of the world’s greatest cities in which to live and learn, work, invest and discover – a place of possibility” (2014: 4)

The report proposes a 4-step path to achieving the 2040 vision.

1 STEP ONE: Creating the platform (2014-2019)
2 STEP TWO: Implementation at scale (2020-2025)
3 STEP THREE: Accelerated improvement (2026-2033)
4 STEP FOUR: Sustained Performance (2034-2040)

The document makes no specific reference to the BLMEP site. The development of the site will fall within step one of the 4 steps. Within this time frame, the “implementation of catalytic game changer projects and the creation of an infrastructural and institutional networked platform that sets in place a cycle of self-sustaining regeneration”. Urban turnabout and the “transition from urban decay, socio economic decline, urban fragmentation and disinvestment to urban regeneration, interconnectivity, socio economic upliftment, re-investment and renewal will be achieved within the metropolitan node and the Voortrekker Road Corridor.

Step one is broken down into 6 regenerative imperatives (2014: 5):

1 Growth & innovation generating
2 People serving
3 Inter connected
4 Fully developed and densified
5 Eco-logical
6 Well managed
Regenerative imperative 4, parts 4.1 (Accomplished Corridor) and 4.3 (Vibrant Living Corridor) (2014: 6 & 43-44), ties in with location of the site and the ‘Better Living Model’ and other city development ambitions for the BLMEP site.

These imperatives emphasise on the development of vacant and underutilised land as well as promoting high density housing with social, gap and student housing components where this land is situated in transit precincts. Protecting the liveability of surrounding lower density suburbs is also relevant to this site considering its close proximity to Pinelands, which has a leafy and low-density urban fabric.


3.2.11 Safety & Security Policies:

A number of policies have been published with regards to safety and security of developments. These include:

3.2.11.1 Design and Management Guidelines for a Safer City

This set of guidelines, based on passive surveillance, can be used to improve design following the approach of safety though environmental design as outlined in the City of Cape Town policy document. The following sections are relevant to the design of POS and landscape:

1 Clear boundaries and collective ownership of public open space
2 Increased surveillance and visibility
3 Safe access and movement
4 Positive image
5 Positive relationship and layered spaces
6 Good urban management and monitoring
3.2.11.2 Gated Development Policy

(City of Cape Town 2007) This policy covers the tendency to counter safety and security concerns with gated development and not have them integrated into the urban fabric. This is especially relevant to the BLMEP site, as the site is very isolated by the railway and the canal. The policy details regulations and how design interventions such as surveillance measures (as listed above) with open streets and secured buildings within the complex and access limited to tenants and their guests, and public spaces made safe by design and security.

3.2.11.3 Boundary Walls and Fences Policy (2009)

This policy lays out the parameters and limitations of both street side and internal boundaries and fences.

3.2.12 Minimizing the Impact of Storm water from Urban Development on Receiving Waters

Reference: City of Cape Town July 2008

The canal through its water flow, also connects to the entire catchment drainage basin, all the way back to its origin in the Tygerberg Hills. Thus the sites future importance in managing and improving this water flow by the application of Sustainable Urban Drainage Systems, as these measures can only be implemented on larger parcels of land such as the BLMEP site. This has broad potential impacts on the site water system design and its integration with the landscape. The Policy States:

In order to reduce impacts of urban storm water systems on receiving waters, all storm water management systems shall be planned and designed in accordance with best practice criteria and guidelines laid down by Council to support Water Sensitive Urban Design principles and the following specific sustainable urban drainage systems objectives:

1. Improve quality of storm water runoff;
2. Control quantity and rate of storm water runoff;
3. Encourage natural groundwater recharge.

New developments, including both greenfields and redevelopment in brownfields, are required to be planned and designed to incorporate sustainable urban drainage systems generally in accordance with the City’s Storm water Management Planning and Design Guidelines for New Developments, as well as with local and international best practice.

This has implications in terms of design of the POS and gives the opportunity to integrate the storm water management and infiltration measures into the design. This can be done through rain gardens, bio-swales and the recreational use of retention ponds, the integration of these with grey and black water filtration and the recycling of this water for human non-potable use e.g. toilet flushing and landscape irrigation.
3.2.13 Biodiversity and Alien Vegetation Management

3.2.13.1 Strategies, Frameworks, Policies and Guidelines

The following documents detail the implementation of the City of Cape Town Integrated Metropolitan Environmental Policy (IMEP) and have implications for the design and management of the site POS and landscape:

1. Biodiversity Strategy (City of Cape Town 2003)

2. Framework for a Strategy and Action Plan for the Management of Invasive Alien Species in the City of Cape Town (City of Cape Town 2008)

3. Biodiversity Strategic Plan (City of Cape Town 2009)

The site is not within a critical biodiversity conservation zone (City of Cape Town 2010)

These documents have implications for the compulsory removal of declared alien vegetation, especially invasive species, and the plants species that can be used for the future planting of the sites POS. This is further elaborated in the section on landscape plans.

3.2.14 Landscape Plan Submission Requirements

The following documents detail the requirements for the submission of landscape plans, these form part of the planning process “Package of Plans” approach.

1. Model Land Use and Planning & Development Conditions Handbook (City of Cape Town 2009)

2. Site Development Plans Booklet 6 (City of Cape Town 2012)

3. Landscape Plans Booklet 7 (City of Cape Town 2010)

4. Sustainable Landscapes, Practices and Guidelines (City of Cape Town No Date)

Further documentation on policies and guidelines that the city would approve for a development of this nature, if the roads, services and the POS might become part of the city, is listed below. As we have not yet been able to meet with the City of Cape Town’s Parks Department to clarify this, it is difficult at this stage of the design process to know which ones of these will be relevant to the BLMEP or what the implications are for planning and design.

3.2.15 City Parks Development Policies (City of Cape Town 2004)

Development and Planning Issues

1. Hiring of public open space

2. Leasing or disposal of public open space

3. Community partnerships
4 Vandalism
5 Sponsorship and advertising
6 Cultural requirements
7 Services and utilities
8 Maintenance implications
9 Landscape requirements

Provision of Informal Recreation Activities
1 Informal recreational facilities
2 Furniture
3 Playground equipment
4 Bicycles
5 Skateboarding and associated activities
6 Surfaces

Provision of Infrastructure: Built Landscape
1 Toilets located on POS
2 Lighting
3 City Park’s Signage
4 Fences, walls and bollards
5 Access & mobility

Provision of Infrastructure: Soft Landscape
1 Water usage
2 Planting
3.2.16 Parks Development Policy (City of Cape Town 2015)

Final version of the above draft policies

3.2.17 Cape Town Densification Policy (City of Cape Town) 2012

Goal The Densification Policy seeks to improve the city’s sustainability and to enhance the quality of the built environment.

Objectives The Densification Policy’s more specific objectives are to:

1. Ensure optimal and efficient use of infrastructure, services, facilities and land;
2. Support the development of a viable public transport system and to improve levels of access to the city’s resources and amenities;
3. Protect, manage and enhance the natural and built environment and significant cultural landscapes;
4. Provide a framework and guidelines for the assessment of development proposals;
5. Provide homeowners and property investors with a level of certainty regarding areas that will be targeted for various types of densification;
6. Ensure that the scale and character (in terms of bulk, height and architectural styling) of higher-density areas are appropriate to the immediate context;
7. Support the development of mixed land uses, providing for vitality, opportunities and integrated living environments;
8. Cater for the trend of decreasing household sizes; and
9. Contribute to place-making and the development of attractive and safe urban environments.

DP1 The City aims to achieve a minimum average gross base density of 25 du/ha in the next 20 to 30 years, and will aim for a higher gross base density thereafter.

DP3 The intensification of all types of land uses, not just residential land uses, should be encouraged, and a better mix of land uses should be supported.

Determination of intensification of density are given as:

Contextual informants related to the development application and its immediate surroundings, such as the natural environment, land use, built and heritage character, infrastructure availability and capacity, and socio-economic considerations, should determine the densities appropriate in a specific location.
Generic considerations for medium to high levels of density include:

**Access to public transport system (existing or planned)**

Medium to high levels of densification should be aligned with existing/proposed public transport routes. This is essential for housing development targeted at lower-income earners, who are unable to afford the costs of private transport. It should not be an overriding consideration for middle and upper-income townhouse/ group housing developments, as the residents are likely to make greater use of private transport.

**Land use integration**

Preferably medium to high levels of densification should be located near places of employment, social services and community facilities.

**Access and proximity to public open spaces**

Medium to high-density development should have access to urban open spaces (such as squares and promenades), recreational green spaces (parks and sports fields) and/or natural open space (nature reserves, beaches) to provide physical and psychological relief from higher-density living environments.
3.3 Other Statutory Requirements

3.3.1 Environmental Authorisation

The National Environmental Management Act, 1998 (Act No 107 of 1998) (NEMA) stipulates activities within the Environmental Impact Assessment (EIA) Regulations, 2014 that require environmental authorisation to be obtained prior to the commencement of certain listed activities.

As the development is to take place within an urban area, a number of potential environmental activities are not applicable, based on the exclusion clauses provided for in the EIA Regulations.

Throughout the development of the site masterplan, consultation was undertaken with the Department of Environmental Affairs and Development Planning (DEADP) to obtain formal confirmation of the applicability of the NEMA 2014 EIA Regulations to the proposed masterplan. To this end, the DEADP have provided formal confirmation (written communication, 2 December 2015 and 17 February 2016) of the exclusions provided under the Regulations. These exclusions relate to the site being within an urban location and Department of Water and Sanitation confirmation that there is no defined ‘watercourse’ but rather a canal adjacent to the site and as such there are no listed activities applicable. On this basis written Environmental Authorisation is not required from the competent authority for the proposed mixed use development, associated storm water infrastructure including the re-alignment of the Elsieskraal River canal and the extension of Aerodrome Road from Odin Drive to Voortrekker Road. (See Annexure H).

3.3.2 Water Associated Issues

3.3.2.1 General Authorisation in terms of the National Water Act

In terms of the National Water Act, 1998 (Act 36 of 1998) (NWA), provision has been made to allow certain water uses to be authorised under Section 39 of the Act (General Authorisations), without going through the full water use licensing procedure, provided that the conditions and limits published in Sections 21(c) (impeding or diverting the flow of water in a watercourse) and 21(l)( altering the bed, banks, course or characteristics of a watercourse) of Government Notice (GN) 1199 (2009) are complied with.

In a letter dated 21 December 2015, the Department of Water and Sanitation confirmed that there is no wetland on the site and in a letter dated 15 April 2016 the DWS confirmed that the realignment of the Elsieskraal River Canal falls within a general authorisation (GA) and must be registered with the Department of Water and Sanitation (DWS) and the conditions attached to the GA must be adhered to. (See letter from DWS Annexure I)

3.3.3 Water Use Licence in terms of the National Water Act

The Department of Water and Sanitation (DWS) has indicated that Elsieskraal River Canal is not deemed to be a watercourse (Letter from DWS attached as Annexure I).
A WULA is not required only a General Authorisation for the proposed re-aligned canal. No abstraction from the canal is to take place (See services section for further explanation Annexure I).

The potential for wetlands on the site has been investigated by the City of Cape Town and DWS and it was identified that no wetland features are present on the site (formal confirmation to be provided by the City of Cape Town). As such no wetland delineation studies are required and no WUL will be required with regards to development within 500m of a wetland.

3.3.4 Heritage

A Heritage Impact Assessment was completed for the site. A copy of the document is attached as Annexure F

3.3.4.1 Heritage resources on the site

The structures forming part of the Gateway Precinct on the site are all over 60 years in age and therefore enjoy provisional protection in terms of Section 34 (1) of the NHRA (National Heritage Resources Act 25 of 1999):

"34. (1) No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority."

These are now largely confined to the remaining structures contained within the Gateway Precinct and include the Hall/Chapel, the old Nurses Administration building, the Porter’s Lodge and the entrance gateways / boundary wall. These structures are in various states of repair, as illustrated in Figure 12, Figure 13, Figure 14 and Figure 15.

The remaining trees and avenues may be regarded as heritage elements and should be preserved, if possible.

Figure 12: Forest Drive gateway entrance

The heritage structures have been vandalised and are not well-maintained, with heritage fabric damaged or removed. The refurbishment of these structures, for example for adaptive re-use as community facilities, will necessitate alterations and replacement of fabric, and will trigger a permit application in terms of Section 34(1) of the Act.
Figure 13: Hall /Chapel

Figure 14: Gateway Precinct
Figure 15: Nurses Home
3.4 Contextual Analysis

The Coradie BLMEP Site is a 22 Ha site, located mainly upon erf 112657 Remainder. Erf 112657, located between the suburbs of Pinelands and Thornton, as illustrated in Figure 16.

![Figure 16: BLMEP Site location and context](image)

3.4.1 Climate

The local climate system plays a significant role in determining the characteristics and spread of air pollution. The Western Cape has a Mediterranean climate, defined by cool, wet winters and hot, dry summers. Winter weather is the result of cold fronts pushing in from the southern Atlantic Ocean. Summers are controlled by a high pressure system that pushes wet systems to the south and east.

Cape Town’s heterogonous topographical profile allows for the development of microclimates through interactions between the coastal zone, topographical obstructions and land-use patterns. As such, north-easterly berg winds with strong low level inversions are a common occurrence between late winter and early spring.

The site is situated on the flat coastal plain, between Table Mountain and the Tygerberg Hills. As such, it is exposed to the dominant winter and summer winds. Figure
17 shows the annual wind rose for Cape Town in which it is shown that dominant southerly winds appear to have a high frequency of occurrence (greater than 20%) and reach speeds greater than 8 m/s. Figure 18 depicts seasonal wind variations in Cape Town for the same period showing how strong southerly winds dominate during spring, summer and autumn with winter characterised by prevailing, northerly winds.

Figure 17: Annual wind rose for Cape Town for the period January 2012 - December 2013
Figure 18: Diurnal wind roses for Cape Town for the period January 2012 - December 2013
Figure 19 presents the total monthly rainfall, while Figure 20 presents the average temperatures and humidity, for Cape Town for the same period. Cape Town lies within a winter rainfall region and experiences moderate rainfall throughout the year. The total monthly rainfall for 2012 and 2013 was 446.6 mm and 669.0 mm respectively. The humidity for the region was generally high, with the annual average for 2012 and 2013 being 66.3% and 64.6% respectively. The highest monthly average temperature for 2012 and 2013 was 23.9°C and 22.2°C, respectively, recorded during January (summer). The lowest monthly average temperature for 2012 and 2013 was 13.5 °C and 14.2 °C, respectively, recorded during August (winter).

Figure 19: Total monthly rainfall in Cape Town for the period January 2012 – December 2013
Figure 20: Average monthly temperatures and humidity in Cape Town (Jan 2012 – Dec 2013)
3.4.2 Existing Road Network and Public Transport Infrastructure

3.4.2.1 Surrounding road network

The traffic context is examined in more detail in the Traffic Impact Assessment, which is attached as Annexure J.

The following existing roads are impacted by the proposed development and are detailed below:

**Forest Drive Extension**

1. Forest Drive Extension is located north of the site. It is a proclaimed Provincial Main Road, No. 180, refer to Figure 21.

2. It is classified as a Class 3 Secondary Arterial and it is a public transport route (bus and taxi).

3. It is a 2-lane single carriageway road with 3.2 m wide lanes with an 18 m wide road reserve.

4. A surfaced sidewalk is located on the northern side of the road, and painted bicycle lanes of approximately 1.0 m wide is located along both road edges.

**Odin Drive**

1. Odin Drive is a short section of road from a signalised intersection with Viking Way, terminating in a cul-de-sac adjacent and south of the canal.

2. It is classified as a Class 3 Secondary Arterial.

3. It is a 2-lane single carriageway road with 3.2 m wide lanes, with an 18 m wide road reserve.

**Thor Circle**

1. Thor Circle forms a circular route from a 4-way stop controlled intersection with Odin Drive and Albatross Extension through the industrial area of Viking Park.

2. It is classified as a Class 4 local distributor/collector.

3. It is a 2-lane single carriageway road with 3.2 m wide lanes with a 16 m wide road reserve.
Viking Way (M16)
1. It is a 4-lane dual carriageway road in the vicinity with Odin Drive, with 3.2 m wide lanes and a 90 m wide road reserve.
2. It is a proclaimed Provincial Main Road, No. 119, refer to Figure 21
3. It is classified as a Class 2/3 Expressway, and is a public transport route (bus and taxi).
4. A surfaced sidewalk is located on the northern side of the road, and painted bicycle lanes of approximately 1.0 m wide is located along both road edges.

Jan Smuts Drive (M17)
1. It is a proclaimed Provincial Main Road, No. 149, refer to Figure 21
2. It is classified as a Class 2 Primary Arterial and is a public transport route (bus and taxi).
3. It is a 4-lane dual carriageway road, with 4.0 m wide lanes and a 40 m wide road reserve.

Mutual Road
1. It is a proclaimed Provincial Main Road, No. 180, refer to Figure 21
2. It is classified as a Class 5 local access road and is a public transport route (bus and taxi).
3. It is a short (150 m) road between Jan Smuts Drive and Mutual station.
4. It is a 2-lane single carriageway road with 3.0 m wide lanes with a 12 m wide road reserve.

Voortrekker Road (R102)
1. It is a proclaimed Provincial Main Road, No. 159, refer to Figure 21.
2. It is classified as a Class 3 Secondary Arterial and is a public transport route (bus and taxi).
3. It is a 4-lane single carriageway road, with 3.0 m wide lanes and a 20 m wide road reserve.
4. A surfaced sidewalk is located on the southern side of the road.
Figure 21: Road Network
3.4.2.2 Public Transport

Refer to Figure 22 for an extract of the City of Cape Town’s Existing Public Transport Services map, Plan No. PT2-1.1, dated August 2013.

![Figure 22: City of Cape Town Existing Public Transport Services (Source: City of Cape Town)](image)

3.4.2.3 Bus services

Golden Arrow Bus Services (GABS) provides regular services along Forest Drive Extension adjacent to the site. Bus services are also operated on Viking Way, Jan Smuts Drive, Forest Drive, Voortrekker Road and Gunners Circle. Detailed route maps of the local services are not available from GABS. The frequency and capacity of these services will be assessed as part of the TJA. Public Transport (PT) stops are located along Forest Drive Extension near the existing accesses, as shown in Figure 23 and Figure 24.
Figure 23: City of Cape Town Formal PT Stops (Source: City of Cape Town)

Figure 24: PT Stops along Forest Drive Extension (Source: Google Streetview)
3.4.2.4 Taxi services

Various formal taxi routes exist through the study area, along Forest Drive Extension, Forest Drive, Jan Smuts Drive, Voortrekker Road, Gunners Circle, Victory Avenue and Ringwood Drive.

The City of Cape Town Mutual Station Transport Interchange facility is located adjacent to the Old Mutual head office off Forest Drive Extension. This is the only formal road-based public transport facility in the study area. The facility is used by GABS, as well as the public as a Park-and-ride facility.

3.4.2.5 Rail Services

Existing rail services

The site is served by Metrorail’s Central Line, Northern line and Boland Business Express, via Mutual Station. The station provides direct access to the majority of PRASA’s destinations, as it is located on multiple lines. Access to the southern peninsula destinations is via Salt River Station.

Refer to Figure 25 for a diagrammatical layout of the local railway services. The current passenger volumes and capacity of Mutual Station has been requested from Metrorail, and will be incorporated in the TIA if it is made available. The station is located approximately 800 m walking distance or 10 minutes from the site. The City of Cape Town Integrated Public Transport Network Design target specifies that 80% of all metropolitan households must be located within 500 metres of a public transport service.

Figure 25: City of Cape Town Local Metrorail network – diagrammatical (Source: PRASA)
Future rail services

The City of Cape Town Public Right-of-Way Masterplan shows the Passenger Rail Agency of South Africa (PRASA) future north-south link corridor from Stock Road in the south, via the Cape Town International Airport to Atlantis in the north. Refer to Figure 34.

![Map of future rail services](image)

**Figure 26: North-South corridor railway link (Source: City of Cape Town)**

The future of this rail link and likely timeframe for implementation was discussed with Metrorail’s Rail Planning Manager, during a meeting held on Friday 9 October 2015. The following was confirmed:
The then South African Rail Commuter Corporation Ltd, now PRASA, undertook a technical feasibility assessment of establishing a north-south commuter rail link within Cape Town. Refer to the Report: “Langa - Mutual - Chempet Rail Corridor Route Identification and Station Location Report”, Hawkins & Osborn, dated September 2000. The line can be established by constructing a line from the then Metro-South East to the Atlantis line, and has been termed the Langa-Mutual-Chempet (LMC) line.

Various route options were investigated, and the most feasible route option identified is Option 1D. The route will traverse the site on the south-eastern border with the canal, as indicated on the City of Cape Town planning as indicated in Figure 34. It should be noted that the Option 4 route was regarded as a viable alternative. This route alignment will not require the section along the BLMEP site, but will be located further west, primarily along existing railway lines.

The LMC Rail Corridor Route Identification report recommended the following:

1. Option 1D be accepted as preferred alignment to establish the LMC corridor pending the outcome of an operational analysis. This analysis is pending.

2. Option 4 be accepted as valid alternative to provide a first phase direct link along the LMC corridor by utilising the existing railway network.

3. The acceptability of Option 1D and the alternative Option 4, as well as a “do minimum option” be further investigated as part of a comprehensive assessment of all public transport mode options. This investigation must be undertaken in terms of an integrated Environmental Management (IEM) process.

PRASA stated that the proposed corridor will be a dual electrified line, and will require a 40 m rail reserve, as well as a building line adjacent to the reserve. The width of the building line will be determined by the future land-use and building typologies adjacent to the reserve. The Option 1D alignment does not have an established rail reserve or servitude, and the required land over the BLMEP site may have to be expropriated by PRASA in order to implement the railway line.

PRASA stated that when demand and other factors justify the need for the LMC corridor, they will declare an “Intention to Implement” the line. This will include detailed pre-feasibility, feasibility and detail design phases. PRASA also confirmed that the LMC corridor is not on their short to medium term planning at this stage. PRASA requested that the conceptual development layout of the future BLMEP be submitted to them for formal comment.

CITY OF CAPE TOWN indicated that the Option 1D alignment may not be financially feasible due to technical considerations associated with the alignment of the line. The rail line must cross Forest Drive Extension, Voortrekker Road and the existing Central and Northern railway lines with rail over road and rail over rail bridges. This will require that substantial sections of the line be built on embankments or viaducts. The TCT officials were also not in agreement as to the overall need and desirability of the Option 1D alignment. To note is that a portion of the Wingfield Aerodrome site has been granted to the Ndabeni Community Trust as part of a land claim.
3.4.2.6 Integrated Rapid Transit (MyCiTi)

The City of Cape Town’s Integrated Rapid Transit System (IRT) will be introduced through the study area via Jan Smuts Drive in future. Refer to Figure 28 for an extract of the City of Cape Town Integrated Rapid Public Transport Network (IRPTN) map, Plan No. PT1-1.1, dated August 2013. Jan Smuts Drive is planned as a future IRT (MyCiTi) trunk route. It should be noted that this is a high-level route alignment and may change in future. The City of Cape Town Preferred IPTN Alternative map, dated May
2014, also shows a future IRT feeder route along Forest Drive and Forest Drive Extension. Refer to Figure 29.

Due to the medium to long-term implementation period of the future IRT services, it is not possible to assess what impact the services will have on the site. The frequency, capacity and bus stop locations are unknown at this stage.

Figure 28: CITY OF CAPE TOWN IRPTN proposed trunk route (Source: City of Cape Town)
3.4.2.7  Non-Motorised Transport (NMT)

A detailed non-motorised transport (NMT) review has not been undertaken at this stage as the site is vacant and there is no existing pedestrian demand or desire-lines to and from the site. However the following is noted:

1. The surfaced sidewalk adjacent to the site along Forest Drive Extension is in a good condition.

2. A pedestrian desire line between the site and the Mutual Station is safely accommodated along Forest Drive Extension and the road-over-rail bridge near the Jan Smuts Drive intersection.

3. No direct pedestrian access is possible to the south and west of the site due to the canal and railway line.
4 Pedestrian accessibility is therefore poor, and limited to the route along Forest Drive Extension only.

Refer to Figure 30 for a photograph showing the bicycle lanes and surfaced sidewalk along Forest Drive Extension.

Figure 30: NMT Infrastructure along Forest Drive Extension (Source: Google Streetview)
3.4.2.8 NMT Planning

Refer to Figure 31 for an extract of the City of Cape Town map showing the existing and planned Non-motorised Transport Network in the vicinity of the site. Source: City Wide NMT Planning, Infrastructure and Implementation: Central Region, Sub Region 2 dated February 2010. The planning status and likely timeframe for the implementation of these routes are not known. A Class 4 local cycle route is located along Forest Drive Extension, and a Class 2 and Class 3 Metropolitan cycle route will be located along Forest Drive and Jan Smuts Drive respectively.

Figure 31: City of Cape Town NMT Network plan (Source: City of Cape Town)

3.4.2.9 Bus services
The future NMT routes will not have a notable positive influence on the site, as access over the canal and the railway line will still not be possible. Furthermore, a potential risk may be caused by pedestrian demand from the site, as it may result in illegal and unsafe crossing of the railway line and the canal.

3.4.2.10 Freight transport

There are no freight routes in the vicinity of the study area, and any required freight transport to and from the site will have to be road based.

3.4.3 Proposed Access (Contextual Movement)

Access spacing was determined to be in-line with the Western Cape Government’s Road Access Guidelines (RAG) of 2002, as well as the COTO SA Road Classification and Access Management Manual, dated August 2012. In terms of RAG, the Conradie BLMEP is regarded as “Urban” with the proposed density in excess of 100,000 m²/ha. Forest Drive Extension is classified as a Class 3 Arterial, however due to the lower density development to the north of it, RAG classifies it as a Class 3 Distributor (Suburban).

Vehicle and NMT access to the Conradie BLMEP is proposed as follows:

3.4.3.1 Primary Access Off Forest Drive Extension

A primary access will be located off Forest Drive Extension at the existing exit only road from the site as illustrated in Figure 32. The access will be signalized.

The access will be located directly opposite the Mupine access to form a standard 4-leg intersection. The Mupine access will have to be relocated approximately 10 m westwards to allow this. The Conradie access cannot be located elsewhere due to the heritage buildings located between the current entrance and exit roads. The heritage buildings must be retained, and the walls adjacent to exit may have to be rebuilt due to their heritage value.

The existing entrance road to the site will be utilised as an NMT-only access.

Access 1 will be located approximately 510 m from the Forest Drive/Mutual Road signalized intersection. RAG recommends an access spacing of 540 m for signalised intersections on a District Suburban Distributor. COTO recommends an access spacing of 600m (+/- 20%) between urban signals on a Class 3 route, therefore a minimum of 480 m. Access 1 will therefore adhere to COTO Standards, but will fall outside RAG guidelines.

It is hereby motivated that the sub-standard access spacing from the Mutual Road intersection to Access 1 should be considered favourably by City of Cape Town, as this access must be workable given the internal road layout of the development and heritage buildings. The internal road layout will also be largely retained due to their Heritage value. Access 1 cannot be located further east along Forest Drive Extension, as the sub-standard spacing between Access 1 and Access 2 will be worsened.
3.4.3.2 Access From Forest Drive Extension Via New Class 4 Road

A second intersection is proposed on Forest Drive Extension. This intersection is required as the northern termination of the City of Cape Town proposed Class 4 route between Forest Drive Extension and the future Odin Road extension over the canal. The access will be a standard 4-leg signalised intersection.

Secondary accesses are proposed off this new Class 4 route via left-in left-out accesses and a roundabout as illustrated in Figure 33.
Figure 33: Primary and Secondary Access Options
3.4.4 Bulk Services

3.4.4.1 Sewer

Figure 34 Existing Sewer Network around/adjacent to the Conradie Site

Source: City of Cape Town Project Title: Erf 112656, Existing Sewer Network, 8/10/2015

The existing sewer network shown in Figure 34 indicates an existing 750 mm diameter bulk sewer pipe (Northern Sewer) running adjacent to the existing Elieskraal canal and a 150mm sewer connection from the Conradie Site, crossing the Elieskraal Canal and connecting to the 750mm diameter sewer pipe.

3.4.4.2 Solid waste

Anthony Isaacs has confirmed that the City of Cape Town solid waste transfer centers have the capacity to include collection of ‘normal’ (household and office) refuse from the BLMEP site. Note that Athlone waste transfer center is less than 10 km from the BLMEP site and is planned for upgrade.
3.4.4.3 Water

The existing water network indicates an existing 380mm diameter bulk water main running along Forest Drive and across the entrance to the Conradie site. The pressure in the pipeline is indicated as 90m < Head (m) which is considered a very good pressure.

The City of Cape Town officials informed us that there is sufficient capacity within the existing water network to accommodate the proposed development of 3000 units although this cannot be 100% confirmed before they received feedback from Bulk Water Division.

In the past, there were reported pressure problems on the site and this was rectified at the time by using the two existing water towers. From this information it is assumed that the 150mm diameter erf connection was inadequate for the site.

The GIS water information is shown in Figure 35.

Figure 35: Existing Sewer Network around/ adjacent to the Conradie Site

(Source: City of Cape Town Project Title: Erf 112656, Existing Water Network, 8/10/2015.)
3.4.4.4 Storm water and flood lines

The Storm water studies used in this report to determine the current storm water infrastructure and flood lines on and around the site include the following:


The Gibb Master plan in Section 3.2, Elsieskraal Canal Analysis reports as follows:

“Based on the draft report entitled “Elsieskraal River Hydrological Report”, dated December 2002 as compiled by Ninham Shand (Pty) Ltd, the Elsieskraal Canal does not overtop its banks for neither of the 1:50 nor the 1:100 RP(return period) flood events.”

City of Cape Town Salt River: Draft SWMP Report indicates that the entire BLMEP Site is under the 1:100 year flood line, with 95% of the site under the 1:50, 1:20 and 1:10 year flood lines. This is totally contradictory to the previous studies and indicates the canal alongside the site (and the road/rail crossing at Jan Smuts Avenue) cannot contain flood waters in excess of the 1:5 year flood.

The following extracts from the Salt River Catchment Report Chapter 10, Summary of Conclusions are considered significant and could account for the differing conclusions of the various storm water masterplans and flood line studies.

In Chapter 11, Summary of Recommendations, of the City of Cape Town Salt River: Draft SWMP Report (refer Figure 36) states the following under Task 3.6: Flood Risk Assessments:

“Areas where significant impacts have been identified, should be assessed in more detail which area specific data particularly relating to potential damage.”

Note that the Gibb Master plan also recommends that a flood line study be undertaken before any development on the site.
Figure 36: SRK Report: 1:50 and 1:100 year floodlines over the entire BLMEP Site
3.4.4.5 Electricity/ICT (Smart City)

Information was received from City of Cape Town Electrical Department (Calvin Davids) regarding the site registered as BLMEP Care Centre at the time of the application for power. Mr Davids confirms that the site is currently being fed by City of Cape Town Electricity Department, however they will need to do an onsite inspection of the sub-stations to obtain the Sub-station and Meter numbers before they can confirm the Notified maximum demand (NMD).

3.4.4.6 Fire Fighting

According to Development Parameters: a Quick Reference for the Provision of Facilities within Settlements of the Western Cape, the response time for a fire station is the primary variable used in determining the ideal location of fire stations. In this regard it is assumed that the Epping Fire Station on the corner of Vanguard Drive and Viking Way, Epping Industria 1 (response time < 8 minutes to the entrance of the site in Forrest Drive) is the Fire Station for the site.
3.4.5 Local Context

3.4.5.1 Land use, Zoning and Urban Form

Current zoning

Current Zoning is illustrated in Figure 38. The property is located mainly upon Erf 112657 Remainder.

![Zoning diagram from the City of Cape Town GIS information Layer: June 2014](image)

Figure 38: Zoning diagram from the City of Cape Town GIS information Layer: June 2014

Strategic Development Information (SDI) and Geographic Information System (GIS) Department at the City of Cape Town (Development Information & GIS.)

Erf 112656 remainder, currently accommodates the OPC clinic and takes its access across Erf 112657.
The zoning of the current erven is given as Limited Use according to the City of Cape Town Zoning viewer website. A transitional mechanism, the Limited Use (LU) zoning, deals with land that was zoned as undetermined in previous zoning schemes and limits development to existing lawful uses only.

In terms of the City of Cape Town Municipal Planning Bylaw, 2015 (MPBL), the limited use zoning currently allows for uses as specified in Table 11.

**Table 11: Zoning use rights**

<table>
<thead>
<tr>
<th>Primary Use</th>
<th>Primary uses are limited to lawful uses existing at the commencement date. Consent uses: None.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development rules</td>
<td>No new building or structure and no change of an existing use or alteration of the external structure of an existing building or structure is permitted.</td>
</tr>
<tr>
<td>Rezoning</td>
<td>If additional uses or development rights are required, a rezoning application to another more appropriate zoning in terms of the development management scheme must be processed.</td>
</tr>
</tbody>
</table>

The canal which is to be consolidated with Erf 112657 is currently zoned as Open Space 2.
3.4.5.2 Surrounding zoning, land use and urban form (character)

The Surrounding zoning and land use is illustrated in Figure 39 and described below. This gives some idea of the urban character/nature of the area.

Figure 39: Land use from City of Cape Town GIS information layers: J2014 and verified through site visit and desktop analysis

Obtained from the Strategic Development Information (SDI) and Geographic Information System (GIS) Department at the City of Cape Town (Naomey Lottering Senior GIS Analyst: Development Information & GIS.)
East

Directly east of the site is the existing Orthotic and Prosthetic Centre, and beyond this is the Jewish Cemetery, located on both sides of Forest Drive. These sites are all zoned for limited use as illustrated in Figure 40.

![Image of Jewish Cemetery located adjacent to the subject property (Google streetview)](image)

Further east lies the suburb of Thornton. This is a low density, suburban area characterised by a low to medium income grouping. The built form is domestic in scale (Figure 41).

Existing building materials generally consist of plastered brick, with tiled pitched and hipped roofs on single plots. According to the 2011 Census, it has a population of 4,751 people. As stated by the property24 website, the median house price sale in 2015 was just below R1.2 million (Figure 42).

A triangle of land on Forest Drive is zoned for General Residential use and the majority of the remainder of Thornton is zoned for Single Residential Zone 1.

Beyond Thornton is the suburb of Goodwood.
Directly north of the site across Forest Drive is the Anfield Village Development (GR2), which comprises a number of three storey apartment buildings. (Sale prices in 2015 ranged on average between R300 000-R500 000) (Reference: Property24 website). Refer Figure 43.
Figure 43: Anfield Village Typical three storey apartments (Google streetview)

Adjacent to this, to the North West, is the Mupine Golf course and Tsiba education campus (General Business Zone 2) which is located in a building called Mupine (Old Mutual’s former training facility) as is illustrated in Figure 44.

Figure 44: Golf course (Mupine) and Tsiba Building (Google maps)
Figure 45: Old Mutual Headquarters (Google streetview)

The Old Mutual Financial Headquarters building in Pinelands (Figure 45) is zoned as General Business 3 and is located next to Mupine.

Beyond Old Mutual is the main Cape Town railway line and, beyond the railway line, is the Maitland Cemetery (Limited use zone) and the suburbs of Maitland and Kensington.

West

Some of the Old Mutual headquarter buildings and the suburb of Pinelands is located west of the site. Pinelands is a middle to upper income, mainly residential, former white suburb. According to the 2011 Census, the population of Pinelands was 10,618. Pinelands is 573.2351km² in extent.

As a “Garden City”, Pinelands was planned around a hierarchy of distributor roads and cul-de-sacs, which offer poor permeability. There is only one main road through Pinelands, called Forest Drive. This is problematic for the development of the BLMEP Site as all the traffic is directed through this street and additional traffic from BLMEP will therefore exacerbate current congestion.

Property prices in 2015 according to the Property24 website, were on average R2-2.5 million. Pinelands is known for its large thatched houses, as illustrated in Figure 46.
South

South of the subject property is the industrial area of Viking Park (General Industrial 1) illustrated in Figure 47. This comprises typical industrial low-rise two storey units and warehouses. Beyond this is Epping Industrial area.
3.4.6 Natural Context

Figure 48: Green and open space from City of Cape Town GIS information 2015

Source: Obtained from the Strategic Development Information (SDI) and Geographic Information System (GIS) Department at the City of Cape Town (Naomey Lottering Senior GIS Analyst: Development Information and GIS).
3.4.6.1 Green links

It is clear from the contextual diagram of natural systems (Figure 48), that the Conradie site does not currently form an integral part of a functioning natural system. Although it is located adjacent to the Elsiekrasvl River Canal, this is a highly disturbed system and is fully canalized.

The canal provides an opportunity for linking to a larger natural system, however this would need to be part of a larger strategic upgrading of the canal system (Please refer to section on Services for discussion on storm water attenuation).

3.4.6.2 Ground Water

The site is situated above the Cape Flats aquifer, which has been identified a major aquifer being a high-yielding system of good water quality (Figure 49).

The aquifer has been identified as a ‘most vulnerable’ region, which implies that it is vulnerable to many pollutants, except those strongly absorbed or readily transformed through pollution scenarios (Figure 50). As such the aquifer should be regarded as having a high potential of being contaminated by development and residential activities.

Figure 49 Aquifer classification
Vegetation, biodiversity and threatened ecosystems

The site is in a highly disturbed state due to the development, operation and subsequent demolition of the Hospital infrastructure. The site consists of predominantly open areas of neglected kikuyu grass, scattered trees, roads and cleared areas from the demolition of buildings.

Due to the urban nature of the area, no threatened ecosystems of concern to the proposed development have been identified. The closest designated Critical Biodiversity Area (CBA) is situated approximately 750m north of the site (Figure 51).

A tree survey was undertaken in 2007, which identified that the existing trees have little value from an ecological point of view as fewer than 10 indigenous trees were identified on the site. The tree survey identifies trees that should be retained on site, as well as those that have the potential to be relocated. The results of the tree survey are to be considered during design phase in order to retain as many of the recommended trees as possible.
Figure 51: Critical Biodiversity Areas in the vicinity

Protected areas

There are no protected areas on the site and the closest protected areas to the site are identified as follows:

1. Table Bay – Zoarvlei Section – Approx. 4km west
2. Table Mountain National Park – Approx. 6.25km south west

With additional conservation areas in the region identified as:

1. Two rivers urban park – Approx. 4km west
2. Rondebosch Common – Approx. 4.5km south west

Figure 52 shows the position of the above identified protected areas and their proximity to the site.
3.4.6.4 Hydrological considerations

Surface Water

There are no surface water features on the site. The closest feature is the Elsieskraal River Canal, which runs along the entire length of the south-east boundary of the property. Storm water is discharged into this canal via a detention pond situated at the southernmost corner of the site. A 2014 study shows the site to be within the flood line of the Elsieskraal River Canal.

Other than the Elsieskraal River Canal, there are no major surface water features in the immediate region of the site. The closest features being storm water detention ponds as indicated in Figure 53. It is anticipated that the proposed development will not impact these surface water features.
Figure 53: Surface water features in the vicinity

3.4.6.5 Geotechnical conditions

A preliminary geotechnical assessment was undertaken by Arcus Gibb in 2007 for the proposed extension of Aerodrome Road which assessed the area directly adjacent to the proposed site continuing northward (Figure 54 illustrates the area assessed). According to the report, the site for the proposed road extension is situated on reworked sands of the Recent Springfontein Formation.

Based on its proximity to the identified site, it is anticipated that this would also be applicable to the BLMEP site. The area has been reworked, over many years, with sand dunes levelled and sand placed to reclaim low-lying vlei areas.

The geotechnical assessment showed that almost the entire site for the proposed road extensions had been reworked and consisted of sandy fill with minor amounts of builder’s rubble, brick, concrete and stone aggregate. The deeper, in-situ soils grade from sands to silt and clay sands with ferruginised layers and represent a sequence of fluvial sediments. The sediment cover may vary from 5m to over 20m thick and overlies weathered shales of the Precambrian-age Malmesbury Group (Arcus Gibb, 2007).

The report showed that the site is very similar in terms of the near-surface soils as most classify as non-plastic granular sands; in general the route of Option 1 Figure 54 consisted of uncompacted loose sandy soil. The water table was encountered within 1m of the surface over most of the area. However, it is important to note that the...
investigations were undertaken during a period of heavy winter rains, with frequent delays experienced in the course of the investigation due to the high intensity of the rainfall. This area is low-lying and Maitland Cemetery has had a long history of flooding.

Arcus Gibb concluded that the area is underlain by very loose reworked sands with a high water table present throughout the area, noting that foundation conditions for even lightweight structures in the sands are very poor.

The report identified that the deeper soils appear to be dense and stable with bearing capacities at depths of 1.5m estimated to be approximately 200 kPa. However, given the shallow water table it is considered that piled foundations will be required. The most significant constraint on road construction is considered to be storm water drainage and the high water table in the northern parts of the route.
Figure 54: Geotechnical investigation area for the proposed extension of Aerodrome Road
3.4.7 Transport Considerations

3.4.7.1 Competing, latent developments

The only known latent development in the vicinity of the site, that may have an impact on the transportation network, is the proposed Mupine residential development. The development will be located on a portion of Erf 4211, located to the north of the site along Forest Drive Extension, with access off Forest Drive. The Mupine Traffic Impact Assessment (TIA) notes the following:

1. The proposed Mupine development is targeting 800 residential units, 50% Social housing and 50% Gap housing.

2. The developer is a Social Housing Institute (SHI) with support funding from Old Mutual with an arrangement to provide accommodation for Old Mutual employees.

3. A previous development attempt on the site targeted 515 middle income units. This was, however, abandoned due to the impact of increased traffic congestion in the study area.

4. The TIA motivates for a PT2 zoning and will therefore provide less parking per residential unit and therefore be far less reliant on private transport.

The Mupine TIA suggests that limited road infrastructure upgrades will be required, except the signalization of the access intersection to the site, and a footbridge link to Mutual station.

The TIA motivates for Travel Demand Management (TDM) to be implemented which will include:

1. PT2 parking allocations independent of the residential units.

2. Rental only option of the available parking bays.

3. Inclusion of NMT routes for pedestrians and cyclists on Forest Drive.

4. Provision of retail and amenities close to the development.

5. Provision of bicycle lock-up facilities and ablutions and shower facilities.


7. Upgrade lighting and encourage active street and shop fronts.

8. The report makes little mention of strategic road upgrades that will be required in order to support the proposed development, namely Aerodrome Road or an extension to Odin Way.

It should be noted that the proposed, signalised access off Forest Drive Extension to the Mupine development will impact access to the BLMEP site. Local access and integration.
The only road access to the site is located off Forest Drive Extension. There are two, separate accesses of 4.0 m wide each. These used to operate as a one-way in and one-way out access. The accesses are approximately 32 m apart and are separated by a security access building, protected under the National Heritage Act, No. 25 of 1999.

The site is, therefore, very poorly connected to the local road network due to the railway line and the Elsiesriver canal adjacent to the site. However it is well connected to the major regional road network.

3.4.7.2 Transportation Modelling

The implementation of a portion of the future Odin/Aerodrome Road Extension was identified as part of the road infrastructure that will be required to enable the successful implementation of the Conradie BLMEP. This was determined during the Project Scoping Phase and Contextual Analysis, based on information obtained from the previous GIBB Central Park Development TIA.

An Emme 4 transportation model was used to detail the specific requirements of the Odin/Aerodrome Road Extension with regards to the phased development approach of the Conradie BLMEP. This includes road class, cross section, basic alignment, capacity and local access. The update of the Emme 4 model was undertaken by Wilfred Crous, an independent transportation consultant.

3.4.7.3 Emme 4 Transportation Model

Transport for Cape Town (TCT) requested an update to their local transportation network model (Emme 4) in order to determine the impact of the following on the local and sub-regional road network:

1. Conradie BLMEP development (phased and ultimate development).
2. Implementation of a portion of the Odin/Aerodrome Road Extension.

3.4.7.4 Summary Of Results

The Conradie BLMEP will be well connected to the metropolitan public transport system. The bulk of the development will be for lower income residential purposes, and it is therefore expected that car ownership will be less than the metropolitan average and that most residents will be dependent upon public transport. For transport modelling purposes it is assumed that the commercial and office developments on the site will attract their normal share of road-based traffic.

The transport modelling analysis shows that the development will have a relatively small impact on the road network, but that the Link Road and its southern connection to Odin Drive will be required to reduce traffic through the residential area of Thornton. Capacity improvements at the Forest Drive Extension/Jan Smuts/Mutual intersection will be required to manage the additional traffic demand at this busy junction, however due to geometric constraints these are not feasible and some peak-hour spreading will occur.
The future extension of Odin Drive northwards to Voortrekker Road has always been an important element in the metropolitan road system. This was confirmed by the model results which show a high latent demand for this link and a concomitant reduction of traffic through the Thornton residential area. Scenario runs with and without the Conradie BLMEP show that this traffic demand is primarily from existing sources, trying to minimise travel distance or to avoid congestion on the surrounding metropolitan road system.

The model results confirm that an undivided Class 3 cross-section with one lane per direction will provide sufficient capacity along Odin Drive, its northern extension and for the Class 4 Link Road over the Conradie site. The volumes are estimated to be high, but the infrastructure should cope with well-designed intersections and the minimisation of side friction. It should be noted that current capacity constraints on Voortrekker Road will play some part in regulating the traffic demand along the new Odin Drive Extension.

The further northern extension of Aerodrome Road to the future Frans Conradie Drive will however introduce a strong new traffic pattern with demand estimates exceeding the single lane capacity of Odin Drive. This particular concern will however persist while there are current capacity problems on Vanguard Drive, Viking Way and Jan Smuts Drive.

Modelling tests for the 2032 Pragmatic Densification land use scenario show that a single lane cross-section along Odin Drive should be sufficient, despite the increased future travel demand. This is possible due to anticipated shifts towards public transport and the additional planned capacity on the metropolitan road system around the periphery of the study area.

### 3.4.7.5 Conclusions & Recommendations

The transport modelling results confirmed that an undivided Class 3 cross-section with one lane per direction will provide sufficient capacity along Odin Drive Extension to support the full Conradie Development and to provide a valuable metropolitan link with Voortrekker Road. Odin Drive should however be planned and designed as a lower order connector rather than a metropolitan conduit for heavy vehicles or high volumes of through traffic.

The Class 4 Link Road through the Conradie BLMEP will play an important part in the future network and should be designed as a Class 3 Road. A dual-carriageway 4-lane cross-section is not required from a capacity perspective, but may have to be considered for the efficient operation of the access arrangements at the Conradie Development and other adjacent land parcels. This could be in the form of a tree lined grand boulevard type of entrance, with an appropriate median for pedestrian safety.

The future extension of Odin Road beyond Voortrekker Road could have undesirable consequences, and should only proceed in conjunction with the necessary upgrades to the surrounding metropolitan road system.
3.4.8 Socio-Economic Impact Assessment

The Socio-Economic Impact Assessment Report is attached as Annexure K.

3.4.8.1 Complementary Activities identified as a requirement

This section discusses the complementary facilities and activities that are found in the primary study area. An assessment is made of whether additional complementary activities are needed for the development of the site.

Primary and Secondary School Provision (Public Schools)

Figure 55 illustrates all the schools that are found in the primary study area and are within 5km from the BLMEP site.

Figure 55: Location of Schools

The 4 primary schools have enrolments of around 500 (excluding Grade Rs) each. An XL Primary School has approximately 1240 learners (including 120 Grade Rs) which means that the existing schools in the area can be expanded to accommodate additional learners as illustrated in Table 12.
Table 12: Learner enrolments at local schools

<table>
<thead>
<tr>
<th>SCHOOL_NAME</th>
<th>SCHOOLTYPE</th>
<th>MOI</th>
<th>LEARNERS 10 YEARS AGO</th>
<th>TOTALENROL</th>
<th>TOTAL CLASSROOMS</th>
<th>TOTAL INSTRUCT ROOMS</th>
<th>TOTAL CLASSROOM RATIO</th>
<th>UTILISATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>GARDEN VILLAGE PRIM.</td>
<td>Primary School</td>
<td>Par: Afr/Eng</td>
<td>171</td>
<td>453</td>
<td>15</td>
<td>15</td>
<td>30.20</td>
<td>125.83</td>
</tr>
<tr>
<td>OUDE MOLEN HTS.</td>
<td>Secondary School</td>
<td>English</td>
<td>943</td>
<td>588</td>
<td>24</td>
<td>39</td>
<td>24.50</td>
<td>44.61</td>
</tr>
<tr>
<td>PINEHURST PRIM.</td>
<td>Primary School</td>
<td>English</td>
<td>422</td>
<td>413</td>
<td>14</td>
<td>18</td>
<td>29.50</td>
<td>77.45</td>
</tr>
<tr>
<td>PINELANDS HS.</td>
<td>Secondary School</td>
<td>English</td>
<td>976</td>
<td>941</td>
<td>25</td>
<td>42</td>
<td>37.64</td>
<td>100.96</td>
</tr>
<tr>
<td>PINELANDS NORTH PRIM.</td>
<td>Primary School</td>
<td>English</td>
<td>432</td>
<td>450</td>
<td>14</td>
<td>23</td>
<td>32.14</td>
<td>93.20</td>
</tr>
<tr>
<td>THE PINELANDS PRIM.</td>
<td>Primary School</td>
<td>English</td>
<td>368</td>
<td>409</td>
<td>16</td>
<td>20</td>
<td>25.56</td>
<td>58.78</td>
</tr>
</tbody>
</table>

Theoretically, if the primary schools are expanded up to 1000 learners, an additional 2000 primary school learners can be accommodated. Oude Molen High Technical School has approximately 580 learners, Pinelands High School has 940 learners. Both of these schools can also be extended further to accommodate an additional 1400 secondary school learners.

The provision of additional school sites would depend on the type and density of development proposed on the BLMEP site. The following sets out the number of people / dwelling units that will justify the need for different types of educational facilities.

**Early Childhood Development (ECD):**

1. 2400 people (600 dwelling units) for low income areas.
2. 3600 people (900 dwelling units) for high income areas, where a demand has been warranted.

Note: The provision of an ECD is highly dependent on the community profile. As a general rule of thumb, 40% of the children within the age group (1 – 5) should be provided for.

**Public Primary School:**

1. 3000 – 4000 people (approximately 1000 dwelling units).

Note: Settlements with smaller populations will have smaller schools and hence have a smaller threshold in terms of how many dwelling units trigger the need for a primary school.

**Public Secondary Schools:**

1. Between 6000 people or 1500 dwelling units (in non-metropolitan areas) and 10 000 people or 2500 dwelling units (in metropolitan areas).

Note: There are cases where a high school can serve as many as 25 000 people or 6250 dwelling units, however such a school would have to have a very large capacity, with correspondingly large land requirements.
Conclusions

The existing schools can accommodate some additional learners without any additional infrastructure. The majority of secondary learners would have to be accommodated at the Oude Molen HTS.

Limited increased enrolment is possible at some of the Primary schools.

The existing schools have space to significantly increase existing enrolment, through expansion and by adding additional classrooms.

The 4 primary schools have enrolments of around 400 each. These numbers could be doubled through expansion and accommodate up to 1000 additional learners.

The Secondary schools, through expansion, could accommodate another 400 learners (200 at each High School).

Western Cape Education (WCED) has already planned and budgeted expansions up to 2018/19. The first year where expansion could be accommodated would be 2019/20, although this will depend on the need.

Should the high density potential of the site be maximized (>3500 units, with up to 5000 new learners), then, in addition to the existing schools being expanded to capacity as detailed above, there would still be a requirement for space for an additional 4860 learners.

This will translate into 3-5 XL schools, dependent on how many learners choose to use public facilities (refer Paragraph 11.7.2.2 for Private Schools).

Current WCED infrastructure plans provide a 10 year horizon with new, maintenance and replacement projects for the next 10 years lined up. If the Conradie BLMEP development does occur and learners require accommodation, the WCED will have to relook at their current priorities. Based on current planning, they will only be able to accommodate such schools in 2025

Primary and Secondary Schools (Private Schools)

There are a number of Private Schools in the area. The enrolment figures and expansion plans for these are not publically available. They include:

1 Gaia Waldorf School
2 Cannons Creek School
3 Grace PS
4 Leap Science and Maths School and
5 Holy Cross HS
Tertiary Educational Facilities

Generally, a tertiary educational facility, such as a skills centre, requires a population of at least 150 000 people (or 37 500 dwelling units) to justify its feasibility and existence. It should be noted that there may be cases where smaller adult learning centres may be feasible if the demand exists for such a facility in smaller settlements.

Adult education centres or community colleges may have far smaller population thresholds, and require far smaller physical footprints. Traditional Universities will have higher population thresholds, in the order of at least 1 000 000 people (250 000 dwelling units). (Western Cape Government).

Sports Ground Provision

A number of sporting facilities were identified in the primary study area. Table 13 sets out the sporting facilities that were identified in primary study area.

Table 13: Sporting Facilities in the BLMEP Area

<table>
<thead>
<tr>
<th>Area</th>
<th>Sporting Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maitland</td>
<td>Royal Road Sports Ground</td>
</tr>
<tr>
<td>Thornton</td>
<td>College of Cape Town Sports Grounds</td>
</tr>
<tr>
<td>Langa</td>
<td>Langa Indoor Sports Centre and Langa Stadium</td>
</tr>
<tr>
<td>Pinelands</td>
<td>Old Mutual Sports Ground and Golf Course</td>
</tr>
<tr>
<td></td>
<td>Pinelands Bowling Club</td>
</tr>
<tr>
<td></td>
<td>The Cricket Oval</td>
</tr>
<tr>
<td>Kensington</td>
<td>Kensington swimming pool</td>
</tr>
<tr>
<td></td>
<td>Sports ground</td>
</tr>
<tr>
<td></td>
<td>Community hall</td>
</tr>
</tbody>
</table>

Note: There are plans to develop the Old Mutual Golf Course.

The following sets out the number of people / dwelling units which will justify the need for a community sports field:

1  5000 to 60 000 people (1250 to 15000 dwelling units)

The size of the sports field or facility is determined by the type of activity which is required on site, but can range from as small as 2000m² (0.2ha) to as large as 20 000m² (2ha).

2  0.9ha can be provided per 1000 people (250 dwelling units).

The number of units to be built will determine the need for a new sports grounds, taking into consideration the capacity of the existing sports ground in the primary study area.
Health Facilities

Based on the Western Cape Province’s User Asset Management Plan, the area surrounding the BLMEP Development Site is characterised by a medium density of dependent population and the areas with the highest concentration on public health care dependence are located within the Cape Flats area - Mitchells Plain and Khayelitsha. The priority for of the Department of Health is to provide public healthcare facilities closer to areas with the highest percentage of dependent population. Current facilities within the primary study area include:

1. Langa Community Clinic
2. Vincent Pallotti Hospital
3. Pinelands Clinic
4. Kensington Clinic

The following are guidelines used to decide whether a new health facility such as a clinic or hospital is needed to service a new residential development.

Mobile Clinics

Generally, a mobile clinic is warranted where the population is approximately 5000 people (1250 dwelling units), however there are cases where a mobile clinic will be provided to an isolated community that is smaller than this.

Local Public Clinics (Community Health Centers)

The following sets out the number of people / dwelling units which will justify the need for a local public clinic:

1. As low as 20 000 people (5000 dwelling units) in non-metropolitan areas.
2. Up to 120 000 people (30 000 dwelling units) in larger metropolitan areas.

Conclusions

1. It is not foreseen that additional health facilities such as a clinic or new hospital will be required to complement the BLMEP development as the current provision of health facilities within the primary study area should suffice in serving the BLMEP development.

2. The latest strategy and planning report by the Western Cape Province’s Department of Health, requires a health facility in Pinelands but there is no immediate pressure to expand the current service in the area. The placement of this Pinelands facility and the Maitland CDC replacement plus the Langa facility will have to be done together to ensure equitable distances to travel.

3. Hospitals generally serve larger populations of at least a 450 000 people (over 100 000 dwelling units) and therefore it is not foreseen that a hospital will be required as the Conradie development will not serve that many people.
3.5 Summary of Contextual Informants

The key considerations identified in the Expanded Contextual Development Framework Report that inform the Concept Development Framework (CDF) have been illustrated in Figure 56 and Figure 57. They are:

3.5.1 Challenges and Constraints

Transport

1. There is little to no spare capacity on adjacent road network.
2. Limited and congested accessibility to the external road network.
3. No availability of IRT services for the long to very long term (more than 10 years).
4. The internal road surface is generally in a poor condition, the condition of the layer work is unknown. Given the age and probable design standards of the roads, they will not be suitable for a high density residential development.
5. The potential development of the Mupine site will increase background traffic and congestion on the adjacent road network, primarily Forest Drive Extension.
6. An EIA may be required for the Aerodrome Road Extension.
7. The future Langa-Mutual-Chempet (LMC) north-south rail corridor may require expropriation of a portion of the site and impact the quality of life on remainder of the site. It should be noted that the full development of the site may lead PRASA to consider an alternative alignment of this future corridor.

Services

1. Existing City of Cape Town centralised waste water treatment policy and existing operation and maintenance regime which creates barriers to implementation of ‘private’ decentralised alternative technologies.

Water

1. Lack of constant pressure required for fire-fighting due to existing water reticulation infrastructure.
2. Storm water will require special considerations on the site.
3. Competition from other large developments such as Mupine. There are a number of large scale projects poised for development that may offer similar land uses and compete for service requirements.
Spatial

1. Poor legibility. The structure of the local area and layout of surrounding suburbs in relation to the site is confusing and lacking in memorable features.

2. The network of streets and footpaths does not offer satisfactory choice and convenience for users, especially for pedestrians. There are very limited ways to access the site.

3. The site lacks visual enclosure, being defined only by the Elsieskraal River Canal, railway line and fencing along the boundaries.

Heritage

1. The three heritage structures on site to be maintained, namely the Nurses Administration Building, the hall/chapel and gateway structure/boundary wall structure.

3.5.2 Opportunities

Access

1. There is a possibility for a Non-Motorised Transport ("NMT") link from the site, across the Mupine site, to the Mutual Station, to promote integration with the Mupine development.

2. The Thornton station is easily accessible, with surfaced pedestrian sidewalks from the site accessing the station entrance.

3. There is an opportunity for both aligning with and linking to the external road network. This may be achieved across the Elsieskraal River Canal, linking to Odin Drive, to the south of the site.

Elsieskraal River Canal

1. Respond positively to the opportunity created by the adjacent Elsieskraal River Canal to slow down water movement across the site (SUDS) and create flood mitigation measures by realigning the canal through the site and at the same time face buildings onto the Elsieskraal River Canal to create positive spaces. The Elsieskraal River Canal offers an opportunity to create a greenbelt and public amenity through the development that could include running and cycling paths.

Heritage

1. Adaptive re-use of existing gateway precinct structures for community facilities, including a visitors’ centre housing an interpretative display outlining the history of the site. Retention of suitable trees /avenues / open spaces to enhance the ‘sense of place’.
2 Protection and responding to the existing heritage buildings on the site, through height and space setbacks.

**Planning and spatial**

1 Utilising and maximizing the opportunities offered by the sites location at the convergence of the two development corridors (Metro South East and Tygerberg) in terms of the City’s Built Environment Performance Plan (“BEPP”).

2 Conforms to planning frameworks - The development of the site for urban development is advocated in the District Plan and BEPP. No deviations will be required from these plans.

**Transport**

1 Well-developed external road network, in a good condition.

2 Established public transport services (taxi, bus & rail services).

3 Future LMC Corridor rail link via Cape Town International Airport will provide additional accessibility to destinations (work, public services, etc.)

4 The future MyCiTi (IRT) services will improve the quality and frequency of public transport services to the site.

5 Establishment of a Transit Oriented Development that integrates with existing and future public transport services.

**General Services**

1 Private or combination of Public/Private facilities to lessen the burden on municipal finance and expedite provisions of services such as waste water treatment.
Figure 56: Spatial Opportunities
Figure 57: Spatial constraints
3.6 Role of the Site

3.6.1 Historical Role

The site initially functioned as a medical facility for the chronically sick - a ‘chronic sick home’ - on the outskirts of Cape Town, after the outbreak of the bubonic plague in 1901 (Refer Figure 58). The Conradie Hospital, named after JH Conradie, the Administrator of the Cape at the time, was formally opened in 1938 as an institution for adults suffering from various chronic diseases including leprosy. The main section of the hospital was closed in 2006 due to declining numbers of patients, and the site has been dormant since. Numerous structures and ward buildings were built over the years amounting to a total of 64 by 2007. Following the closure of the facility the vacant buildings were vandalised, and now have all been demolished apart from the 3 structures within the gateway precinct and 2 defunct water towers.

Figure 58: Maitland and Pinelands environs, c1931

The Conradie site is shown as the ‘Chronic Sick Home’. (Source: CITY OF CAPE TOWN).
3.6.2 Future Role – Vision and Objectives

As an identified Game Changer project, a Vision was developed for the Conradie BLMEP that distinguishes it from “business as usual” for the Western Cape Government (WCG), as part of the Terms of Reference (ToR) for the project.

This Vision statement was unpacked in the Expanded Live, Work Play Vision Report (October 2015), using a touchstone concept. This touchstone: The Urban Game Changer, includes PEOPLE and PROCESS, balanced with a sense of PLACE in this project, while covering the required elements of:

1. A medium-Density, residentially led development
2. Appropriate Institutional, Commercial, Service Industry and Retail development
3. A Safe and Secure environment
4. Active streets, low car dependencies and walkable urban areas
5. An open space system integrated with storm water attenuation, with well-designed amenities for active and passive recreational needs.
6. Integration of different communities and income groups
7. Bringing government and public services closer to the people where possible
8. Reformed legislation and administration if required
9. The unlocking of funding opportunities, geared towards an integrated solution involving housing institutions, public-private partnerships and the involvement of institutional investors
10. Implementation of alternative technologies if technically viable and financially feasible
11. Use of cost savings through volume procurement, modern methods of construction, asset management processes and reduction of life cycle costs
12. Identification of a changed social and economic role for the site

The expanded vision for the BLMEP site, based on extensive research and detailed in the Expanded Vision Report (October 2015), is to:

1. Develop the BLMEP site beyond the current amalgam of housing and commercial activities into an integrated place where people can live, work and play; that
   1. Provides a welcoming, inspiring place for socially mixed communities.
   2. A diverse, connected and socially inclusive space, and
   3. Demonstrates sustainability in relation to the beauty of green and blue spaces, as well as
4  sustainability in relation to the water and energy resources required for growth, the diversity and value of locally produced food, and the resources which citizens and businesses recycle

5  That attracts investors and

6  Is achieved by means of a Delivery Mechanism that is replicable for future projects.
### 3.7 Urban Design Principles

#### Table 14: Urban design principles

The urban design principles guiding the development of the concept have been illustrated in Table 14.

<table>
<thead>
<tr>
<th>Principles</th>
<th>Description</th>
<th>Strategies</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permeability/Logibility</td>
<td>Make connections</td>
<td>Perimeter blocks, pedestrian routes, squares, landmarks, choice of route</td>
<td>Commercial frontage, additional public space, walkable neighbourhood, additional safety</td>
</tr>
<tr>
<td>Variety</td>
<td>Mix of uses and forms</td>
<td>Land use strategies, urban design guidelines</td>
<td>Vibrancy, interest, activity for longer time periods (24 hour city)</td>
</tr>
<tr>
<td>Quality public realm</td>
<td>Places for people</td>
<td>Parks, squares, pedestrian streets, pause points, places to sit, performance places, activity places (different age groups), management strategy</td>
<td>Social interaction, physical activity, play, local pride of place, support local economies, attract tourism, provide cultural opportunities, improve public health, improve the environment</td>
</tr>
<tr>
<td>Adaptability</td>
<td>Choice, ability to change</td>
<td>Flexible strategies to keep up with the times; Different attractions (cafes, playground, performance stand etc.), event strategy, seasonal strategy, sustainability</td>
<td>Creating space for people; This space can be used for different things at different times, has the ability to be flexible, more users, energy and resource efficiency</td>
</tr>
<tr>
<td>Character/Visual beauty</td>
<td>Regeneration</td>
<td>Urban design guidelines, active frontage, trees</td>
<td>Adds to property values, helps attract business investment, improves the reputation, enhances citizen loyalty</td>
</tr>
</tbody>
</table>
Permeability/Legibility

The cornerstone of Precinct transformation is the physical and visual integration of the site into its context through the use of urban form to define site lines and pedestrian / cycle paths. Urban blocks are arranged in such a way as to enable direct pedestrian movement to and from important amenities including the centre, public-transport routes and stops. Pedestrian movement routes define streets and urban form within the neighbourhood. Open-ended pedestrian routes provide diverse choice of routes to and from any given point. Increased connectivity provides people with multiple choices for increased walkability and in effect encourages an active lifestyle. This makes pedestrian movement safer and more attractive.

Variety

Community connectivity combined with mixed use planning further increases opportunities for residents to walk, rather than drive. Creating a stimulating, enjoyable and convenient place will address the needs of diverse users, amenities and social groups. The inclusion of diverse building typologies and land uses creates a dynamic public realm where people can live, work, learn and play. Diverse housing and retail size options are included to enable a socially diverse community. Strategic distribution of office, retail and residential uses can ensure that key public spaces are activated and safe at all times of the day and night.

Quality Public Realm

The public realm is a platform that facilitates the interaction between individuals, groups and the urban community.

A quality public realm is ingrained with public spaces that ignite social cohesion and endow the community with tools to pursue a healthy lifestyle. Quality public spaces increase safety as they are characterised by active edges on the ground floor and above through shop-fronts and balconies, sheltered pedestrian paths from harsh weather, separate and distinct public and private spaces, quality materials and layout and the stimulating orchestration of landscaping elements. Active street frontage with windows and doors overlook and open out into the street and public Squares to provide good surveillance and safety and the street and the activity within it.
Adaptability

New development must embody flexibility and resilience to respond to future changes in use, lifestyle, demography and climate. Integrating flexible urban design requires the inclusion of interrelated design guidelines and strategies as opposed to a single design solution. An adaptive design framework establishes rules for public spaces, functions, main streets, transformations, building heights and urban units to allow for diverse interpretation and implementation.

Addressing sustainability through design embeds resilience and ensures that the development will adapt to future needs and changes to natural/urban resources. A sustainable design framework incorporates greened streetscapes, roof gardens, good tree cover for enclosure and shade, semi-permeable surfaces, renewable energy technology (solar panels, solar water heaters, cooling towers, and rain water harvesting systems), sustainable urban drainage systems and bicycle storage facilities.

Character and Visual Beauty

Urban character is composed of the various landscape, architectural, formal and decorative features that when combined create a unique urban identity. The Square form engenders a strong sense of identity by establishing a home from which urban identity can be defined.

It also creates a clear hierarchy of private, semi-private and public spaces and provides a solid model for urban regeneration. Visual beauty is enhanced through the integration of architecture and landscape to provide attractive, legible and easily maintained private and public spaces. Character is created by incorporating a human scale to precinct development, safe and attractive public areas, variation in building heights to reduce shadowing and increase solar access, decorative elements, cohesive landmarks, horizontal and vertical stratification of building facades, connected and activated pedestrian paths and public spaces designed to encourage collective enjoyment of nature, activity and recreation.
3.8 Illustration of the Proposed Development

3.8.1 Primary urban design objectives for the site

3.8.1.1 Acknowledge Heritage & Legacy

The Cultural and Architectural Heritage of the precinct contributes towards its character and visual beauty and should be acknowledged in the design of the site, however this is not a primary informant as most of the previous hospital buildings have already been demolished. (See heritage impact report for more detail).

Currently, there are only three structures that have been retained on the site as part of the gateway precinct: The Hall, The Nurses Admin Block and the Gatehouse and adjacent boundary wall. The basic road layout that has an “A” shape to it should be retained as it has historic reference but is also logical given the slightly triangular shape of the site.

3.8.1.2 Functionally Integrate the site with the surrounding context

Whilst the precinct has been primarily used for public health purposes, the public at large has not had access to, or been able to fully appreciate, the locational and historic value thereof. This development as a game changer Better Living Model Exemplar project has the potential to alter the previous Apartheid spatial structure of the City by developing affordable well located housing and bringing working-class previously excluded people back into the inner city from where they were excluded during apartheid. In order to achieve this, the site must be integrated from a spatial, transportation, economic and social perspective.

3.8.1.3 Create Urban and Architectural Excellence

The creation of new public spaces through creative and comprehensive Urban Design, defined by high quality buildings of Architectural Excellence will be the hallmark of this development. An emphasis on the pedestrian experience of the precinct will be a high priority. The precinct should function to accommodate a live, work, play, learn scenario that allows for most aspects of lifestyle to be accommodated on site.

A positive public spatial structure will be developed through:

1. The acknowledgement of heritage assets
2. The establishment of a network of proposed public spaces and resources.
3. Human scale, activity and the promotion of public space
4. A range of uses
5. An active ground floor area, where possible
6. A range of residential accommodation, and socio-economic clientele.
3.8.1.4 Design a sustainable precinct

In the context of the global sustainability challenge and as a Better Living Model Exemplar project, the development will be expected to meet advanced reduction targets in energy and water use and in waste generation and management, in comparison with relevant benchmarks. It will also be expected to address the long-term operation and maintenance costs through choice of materials and efficient design of buildings and infrastructure. A sustainability report has been completed that sets targets for sustainability within the precinct (See Annexure L).

The Conradie Precinct is designed to be a walkable community by creating a pedestrian emphasised environment that gives priority to pedestrians. The nature of the development being a Mixed-use precinct for live, work, play and learning will encourage NMT and walking.

Although the need for this type of development is clearly demonstrated, it is important to ensure that the mix of residential, retail, office and other activities address the attractiveness of the area. Therefore, it would not be sustainable to only provide for a mix of residential units. Other activities such as retail and office play an important role in the sustainability of these developments. The targets that will be met for the BLMEP are illustrated in Table 15

<table>
<thead>
<tr>
<th>Zone</th>
<th>BAU Demand</th>
<th>Sustainable Practices Demand</th>
<th>% Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Residential (3600 Units)</td>
<td>10800 kl/d</td>
<td>4320 kl/d</td>
<td>60%</td>
</tr>
<tr>
<td>Electricity Residential (3600 Units)</td>
<td>77 612 kWh/d</td>
<td>36 089 kWh/d</td>
<td>54%</td>
</tr>
</tbody>
</table>

The site offers many opportunities for implementation of green technologies and the target of a 30% reduction in the use of water and energy is achievable.

3.8.1.5 Make the site accessible

Access to and from the precinct is important. This includes the ability for residents to access all the amenities of living in an inner city context. The BLMEP development will link positively and directly to the public transport system. It is within walking distance of two train stations (Mutual and Thornton) and will be on the MyCiti Bus Route. In addition, development of the site has the potential to extend the existing network of NMT routes in the city. The Conradie Site will also be connected to its surrounding road network to the south and north via Odin Road being extended from its current cul de sac to Voortrekker Road.

It is proposed to provide a 2.5 m wide surfaced sidewalk on the southern edge of Forest Drive Extension along the full property frontage. This link will further improve NMT accessibility to Mutual and Thornton Stations.
3.9 Development Concept

3.9.1 The Location

The Conradie Site is located in a relatively isolated space between Pinelands and Thornton. It is bounded by the main railway line to the Cape Flats, Forest Drive Extension, the Viking Park Industrial Area, Elsieskraal River Canal, the OP clinic. It is also within 1 km walking distance from two railway stations, Old Mutual’s SA Headquarters and Epping Industrial Area. Thus it is well-located but not very accessible.

3.9.2 The Site

The site is 22 hectares in extent, very flat and potentially flooded in extreme rainfall conditions, due to the proximity of the Elsiekraal River that is impeded by the culvert under the railway and Jan Smuts Avenue to the south-west. Currently the only access is from Forest Drive Extension on the northern edge. There are three Heritage features that have been retained and are incorporated into the Layout; The Hall, The Nurses Admin Block and the Gatehouse and adjacent boundary wall. The basic road layout that has an “A” shape to it has been retained as it has historic reference but is also logical given the slightly triangular shape of the site. There are numerous mature trees on the site and most of these, which are in good condition, have been retained as part of the new layout as illustrated in Figure 59.

Figure 59: Site Layout
3.9.3 The Spatial Layout

The primary features of the proposed layout are the "A" shaped central road system, the ±60 x 60m grid overlaid and the new, sinuous, Elieskraal River canal that is being threaded through the southern part of the site to attenuate the flood risk and whose flood plain forms a substantial Park and recreation space. The addition of a new access onto Forest Drive connecting through the extension of Odin Road to the south-east is also a primary spatial element in the form of a Class 4 Access Road. See Figure 54 below.

Figure 60: Structure and geometry

The geometry of the layout defines an east, central, west and south precinct, all of which have frontage onto the Elieskraal River Park and each of which have their own urban and park spaces at a local scale Figure 61.
The East Precinct accommodates the main through road connecting Forest Drive to Odin Road and beyond. Its northern edge faces onto Forest Drive and has a retail and office focus at the lower levels of the buildings with residential above. The eastern edges of the precinct are occupied by 5 and 6 storey apartment buildings for private ownership while the heart of the precinct is the 4 storey Social housing arranged around a Park space that is also part of the storm water attenuation system.

The West Precinct is very similar except that there is no through road and the frontage onto Forest Drive is limited due to the bridge embankment where Forest Drive passes over the railway line. The private ownership 6 to 8 storey apartments are located on the northern and western edges, embracing the 4 storey Social Housing in the middle, also around a smaller park. The southern edge of the precinct has the recreation centre and sports field within the Main Elsieskraal River Park.

The Central Precinct features the original main entrance, the heritage buildings, the main urban square and also the two schools to be provided as part of the development in 4 to 5 storey buildings refer Figure 63. The buildings surrounding the square will have retail, such as restaurants on the ground level and offices on the first and second floors overlooking the square while the heritage hall will be the main social centre.

The South Precinct is elongated along the length of the Elsieskraal River Park and is mainly residential in nature with 6 and 7 storey private an Social Housing buildings all with great views and north aspect. The South Precinct is accessed via a vehicle
bridge and a pedestrian bridge over the Elsieskraal River canal. Figure 62 illustrates the respective building heights.

Figure 62: Heights of buildings
3.9.4 The Open Space System

Note refer Figure 64 for visual detail.

The Elsieskraal River Park is the main Open space that links together all the precincts and provides good access to open space for all the residents. The two secondary parks are also linear and run perpendicular to the main Park, up into the East and West Precincts. The Central Precinct has the main urban square that also contains the heritage buildings. There are a number of smaller urban squares formed by the building arrangements in each of the precincts. It is also proposed that most of the central buildings be of a perimeter block form which then creates semi-private spaces within the blocks, thus providing a range of spaces usable by residents for different purposes.
3.9.5 The Movement System

As illustrated in Figure 65, the primary movement system through the site is the connection from Forest Drive Extension on the north edge to Odin Road extension on the east. This street provides access to the grid system of the site via a series of left-in, left-out intersections and via a central circle. The secondary access, which is the main entrance to the development, is also off Forest Drive Extension in the original Conradie Hospital entrance position. This gives access via the two diagonal streets and the connecting grid to the East, West and Central Precincts.

All the internal streets are 17m reserves to allow for generous sidewalks (2.5m wide), on-street parking on both sides and one lane in either direction. The parking will be paid for by users and actively managed. Parking is reduced to a minimum to encourage NMT and public transport use and reduce trip generation from the development onto the surrounding network. This, together with provision of public transport by the City of Cape Town, Golden Arrow and Metrorail, the residential density of 164 du/Ha, provision of retail, office, school and recreational facilities on site all constitute a Transit Oriented Development (TOD).

The grid is intentionally small to enhance pedestrian accessibility and walkability and to create more “friction” for vehicles, thus slowing them down. There will not be separate cycle paths inside the development but cycle paths connecting to
surrounding areas via Forest Drive Extension (already existing), Odin Road, etc. will be actively encouraged.

The internal NMT network consists of the following to improve walkability and increase NMT usage:

1. Direct NMT access over the canal via the new Odin Road Extension.
2. Improved sidewalks: surfaced, lighting, shade.
3. Dedicated NMT only routes.
4. General pedestrian amenities (street furniture, dustbins, etc.)
5. Safe pedestrian crossings at all intersections, and where required at mid-block crossings.
6. Raised pedestrian tables and/or intersections to control vehicle speeds, where suitable in terms of road class.
7. Universal accessibility along all roads (dropped kerbs, tactile paving, etc.).
8. Pedestrian wayfinding signage to public transport, facilities such as clinics, public open space, etc.

Figure 65: Movement
3.9.6 The Development Mix (Land Use)

85% of the bulk is residential as this is the appropriate mix for this location in the city. The public facilities, retail and office provision is primarily to serve the needs of the resident population and perhaps those in the immediate vicinity such as Mupine. There is also a generous apportionment of Open Space, (5.3Ha) in part due to the storm water attenuation requirement but also because a good quality open space, along with schools, retail, office and sports amenities constitute an attractive residential environment that is necessary to secure private investment. The economic mix in the residential component is targeted at 49% grant-funded with 70% of that being Social Housing, 20% FLISP and 10% Rent-to-Buy. The remaining 51% is open market residential ranging from R500k to over R1m.

The Social Housing and Rent-to-Buy is located in the centre of the development in 4 and 5 storey buildings (with the exception of some 7 storey in the South Precinct.) This is because these residents are expected to have fewer cars, requiring less parking spaces and making for a more pedestrian oriented environment which is widely recognised to be more socially vibrant, safer and attractive. The private apartments are generally located around the edges of the development in 6 to 8 storey buildings with more provision for parking. See Figure 66 and Figure 67.
Figures 68, 69, 70, 71, illustrate what the Development could look like if developed on the basis of the Development Framework. The two aerial perspectives show the heights of buildings, spaces between them, relationships to streets and urban spaces and the open space system that provides the green network of the development. The future Developer may or may not choose to follow this exactly but the nature of a framework is to provide a development envelope within which development can take place, and beyond which it cannot. Therefore the heights of buildings and exact spaces between them may be varied and the individual site subdivision changed to suit the many factors that a Developer has to consider, provided they remain within the development envelope.

The illustration of the Forest Drive Extension interface portrays the kind of active street that would be desirable in this context. It shows public transport, pedestrian and cycle facilities, commercial and retail activities on the lower levels of buildings and residential uses higher up. It also shows generous tree planting to provide shade and a quality street environment.
Figure 71 shows a possible view of the redirected Elsieskraal River Canal through the proposed Park flanked by buildings that look onto the park, providing surveillance for safe use of the park. The Park would provide opportunities for walking, playing, hanging out and recreation as a “lung” for a medium density urban development situated in a well-located position in the City. This creates the balance between higher density living and the need to have natural spaces and places for outdoor activities.
Figure 68: Street Level illustration of Conradie Development facing Forest Drive Extension
Figure 69: View of Elsieskraal River Park from bridge linking East and South Precincts with Devils Peak behind
Figure 70: Low Level Aerial perspective of Conradie Layout and Building massing
Figure 71: High level Aerial perspective of Conradie Layout and Building massing
3.9.7  Landscape Design

3.9.7.1  Landscape design

Principles of WSUDS and application to the site

The key principles of Water Sensitive Urban Design that have been incorporated into the option are: \(^1\)

1. Protect natural systems – protect and enhance natural water systems, (water bodies, rivers and wetlands) within urban developments.

2. Protect water quality – improve the quality of water draining from urban developments into water bodies, rivers and bay environments.

3. Integrate storm water treatment into the landscape – use storm water treatment systems in the landscape by incorporating multiple benefits, such as water quality treatment, wildlife habitat, and public open space, recreational and visual amenities for the community.

4. Reduce runoff and peak flows – reduce peak flows from urban development by on site temporary storage measures (with potential reuse) and minimise impervious areas.

5. Add value while minimising development costs – minimise drainage infrastructure cost of development.

6. Reduce potable water demand – use storm water as a resource through capture and reuse of non-potable purposes (e.g. toilet flushing, garden irrigation, laundry).

Figure 72: Examples of Storm water Attenuation
3.9.7.2 Landscape Design

The landscape design strategy for Conradie BLMEP builds a human-centered space, that provides for individual, social, physical and cultural needs and assets to create a healthy, sustainable and resilient place for people to live, work and play, as illustrated in Figure 73.

3.9.7.3 Green Infrastructure Network

The open space system is structured to interconnect the various outdoor functions including storm water attenuation, active and passive recreations, movement systems and productive gardening.

The envisaged Elskesraal River Canal linear open space will intersect with two secondary parks to form an integrated and unifying green infrastructure framework for developing the Conradie enclave. Future landscaping will focus on landform and tree planting to provide for windbreaks, to absorb built form into the landscape, to give definition and identity to the precincts and public domain.
3.9.7.4 Trees as windbreaks

Additional trees are proposed across the site, planted to act as wind breaks, specifically around the public areas.

Related to the SUDS and the green pedestrian areas, a green infrastructure network, as illustrated in Figure 74, is proposed, based on the following principles:

1. Wherever possible, cluster trees, in groups, in such a way as to create patches of sun and shade and positively influence the passive heating and summer of buildings and hard surfaces.

2. Create opportunities for urban agriculture at all levels to facilitate food security of the resident population and reduce the hidden hunger of the nutrient poor diets of most urban dwellers.

3.9.7.5 Existing trees

Where existing tree lines enhance the structure of the street grid these should be maintained or enhanced.

Figure 74: Landscape Section
### 3.10 Development Controls and Guidelines

Development controls have been created for building floor space, land use and height to guide the form of the development. Each factor is inter-related in which an alteration in one will have an impact on another. This section explains the set of requirements for the precinct.

Table 16 details the controls.

**Table 16: Development Rights and Conditions**

<table>
<thead>
<tr>
<th>Description</th>
<th>Applies to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rezoning to Subdivisional Area with a Subdivisional Area Overlay Zoning (SOA) in terms of Sections 153 and 154 of Schedule 3, City of Cape Town Development Management Scheme (s25(1)(a)).</td>
<td>All land in the consolidated site resulting from consolidation of Erf 112657 Remainder with Erf 158773 and portions of Erf 112656</td>
</tr>
<tr>
<td>Primary, Additional and Consent uses and other provisions of Mixed Use Subzoning 2 (MU2) to be allowed for in SOA.</td>
<td>Applicable to all future land unit subdivisions intended for building development</td>
</tr>
<tr>
<td>Primary, Additional and Consent Uses and other provisions of Transport Zoning 2 (TR2) to be allowed for in SOA.</td>
<td>Applicable to Road reserves to be transferred to City of Cape Town, specifically the Class 4 Access route from Forest Drive Extension to Odin Road Extension and maybe other roads as determined in the future subdivision applications.</td>
</tr>
<tr>
<td>Primary, Additional and Consent Uses and other provisions of Open Space Zoning 3 (OS3) to be allowed for in SOA.</td>
<td>Applicable to land units designated for Open Space such as the Elsieskraal River Park and other smaller parks to be determined in future subdivision applications</td>
</tr>
<tr>
<td>Floor Area</td>
<td>Maximum 350 000m²</td>
</tr>
<tr>
<td>Education Facilities</td>
<td>2 Schools each capable of accommodating 1000 students to be provided as part of development simultaneous with phased development.</td>
</tr>
<tr>
<td>Sports Facilities</td>
<td>1 Sports Facility including at least 1 full size football field and an indoor multi-purpose Sports facility must be provided before over 1800 residential units are approved.</td>
</tr>
<tr>
<td>Proportion of Residential and other Land Uses</td>
<td>No more than 20% of floor space to be for uses other than Residential</td>
</tr>
<tr>
<td>Maximum Number of Residential units</td>
<td>3605</td>
</tr>
<tr>
<td>Reduction in Parking Provision ratios</td>
<td>Grant Funded Housing - 0.25 bays per unit</td>
</tr>
<tr>
<td>From Conventional as follows:</td>
<td>Private Housing – 0.75 bays per unit</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Retail/Service Industry – 4 bays per 100m$^2$, shared 90% with residential</td>
</tr>
<tr>
<td></td>
<td>Office – 4 bays per 100m$^2$, shared 90% with residential</td>
</tr>
<tr>
<td>Heights of buildings to be in accordance with Figure ? below</td>
<td>Generally the maximum height of buildings in Central Precinct to be up to 16m in height, around the Perimeter of the site 25m and inbetween the two, 13m except where shown on Figure ? below.</td>
</tr>
<tr>
<td>Building Setback Maximum for Residential buildings on street boundaries</td>
<td>Setback of Maximum of 3.0 metres (between 0.0 and 3.0m along at least 80% of the street boundary of a site with residential uses)</td>
</tr>
</tbody>
</table>

![Figure 75: General Maximum Building Height Conditions](image-url)
### 3.10.1 Illustrative Development Yield

Table 17 details the proposed development yields which are derived from an assignment of land uses to land parcels as indicated in the site diagram adjacent to the table (Figure 76).

**Table 17: Development Yield**

<table>
<thead>
<tr>
<th>Factors</th>
<th>Bus = 36720</th>
<th>Residential = 213120</th>
<th>Parking</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUMMARY SCHEME</td>
<td>LAND AREA</td>
<td>TOTAL GLA</td>
<td>TOTAL GLA</td>
</tr>
<tr>
<td>Phase A</td>
<td>65025</td>
<td>89760</td>
<td>76970</td>
</tr>
<tr>
<td>Phase B</td>
<td>20750</td>
<td>44100</td>
<td>37485</td>
</tr>
<tr>
<td>Phase C</td>
<td>89550</td>
<td>115800</td>
<td>99120</td>
</tr>
<tr>
<td>OPEN SPACE</td>
<td>53967</td>
<td>66921</td>
<td>51842</td>
</tr>
<tr>
<td>Total</td>
<td>220000</td>
<td>249661</td>
<td>213384</td>
</tr>
</tbody>
</table>

Note 1: Total Land Area does not include existing Canal Land area although it is required for some of the parking provision.

Note 2: Reduced Parking requirement is different from TIA as this Yield Table is revised after input from TIA (Same methodology is used).

**Figure 76: Possible Phasing in order to determine yield (Indicative only)**
Assumptions that underlie the land use assignment are as follows:

1. Grant-funded Housing will always be maximum of 4 storey walk-up, lifts are too expensive.

2. Grant-funded Housing and Open Market residential are not mixed into one building as the South African Property development market has not developed sufficiently to be able to manage the financial, tenant management and tenure complications inherent in mixing these two types of development into one building. This was confirmed in the responses to the EOI.

3. Open Market Residential and grant-funded Housing buildings have been allocated office, retail and educational facilities as these can be financed and managed by either types of developers.

4. Open Market residential has been modelled at a maximum of 8 storeys as this is regarded as an acceptable maximum height in the context of Old Mutual HQ and associated parking structures.

5. The provision of retail, service industry and office space is primarily to serve the future population of the Conradie site and not intended as a retail, service industry or office destination. However, it is likely to serve at the least the Mupine development across the road as well. Thus the provision of non-residential space is about 15% of the total bulk.

6. The Parking ratios assigned are broadly in line with a TOD (Transit Oriented Development) approach and are being negotiated with the City of Cape Town. Modern social housing developments in Cape Town, for example Steen Villas, will be assessed to support the argument for a reduction in parking provision ratios together with 90% shared parking for retail and office.

7. A general factor of 85% of floor space has been used to calculate the Gross Lettable Area (GLA) for the purpose of this analysis.

3.10.2 Parking Reduction Motivation

A parking reduction is proposed and hereby motivated for, in-line with TOD principles and the reduced trip generation rates used to calculate the development’s vehicle trip generation.

The following is noted regarding the land-use mix of the Conradie BLMEP:

1. Approximately 50% of the residential units (1805 units) will be Grant Funded with an average size of 43 m², aimed at the low income market. These residential units will therefore have Very Low Vehicle Ownership (VLVO), as defined in TMH17.

2. The balance of the residential units (1800 units) will have an average size of 45 m² to 80 m², and will be open market units. These units will be aimed at the lower to middle income residential market, and is also expected to be characterised by reduced vehicle ownership - Low Vehicle Ownership, (LVO).

3. On-street parking will be provided along the bulk of the new internal road network.
4 The on-street parking can accommodate a large proportion of the parking requirements of the development, including pick-up and drop-off areas for public transport (mini-bus taxis), loading zones, etc. Due to the isolated location of the development, the on-street parking bays will only be utilised by the residents and visitors of the Conradie BLMEP, and will not be for general public parking. The on-street parking provision should therefore be considered as part of the total parking requirements of the development.

5 The Education and Other land-uses were not considered in the parking provision, as trips to these will primarily be NMT and will be generated within the development. Some parking provision for the educational facilities will be accommodated within the mixed-use zones, as it is proposed that the 2 schools are incorporated in the building layouts and not as conventional stand-alone facilities.

6 It is proposed to provide at-grade surface parking within each development erf.

7 Combined trip generation reduction factors per land use will be used, as the development will be within walking distance from a major transit node (Mutual and Thornton Stations), the development will be mixed-use and the residential land-uses will all have low or very low vehicle ownership, as defined in TMH17.

8 The NMT link to Mutual Station is sufficient, however it is recommended to improve it and to provide an additional link from the development’s north-western corner directly onto Forest Drive Extension. NMT access is not currently possible at this location due to the level of the Forest Drive Extension road over railway bridge.

9 The NMT link to Thornton Station needs to be upgraded to provide a surfaced sidewalk along Forest Drive Extension, all the way to the station.

3.10.3 Proposed Parking Provision Ratios

It is recommended that a reduced parking provision ratio be approved, and that shared parking between residential and non-residential land-uses be allowed, namely:

1 Grant funded housing - 0.25 bays per dwelling unit
2 Open-market housing - 0.75 bays per dwelling unit
3 Offices/service industry - 4 bays / 100 m² GLA (90% shared parking)
4 Retail - 4 bay / 100 m² GLA (90% shared parking)

The Table 18 shows the application of the proposed Parking Reduction methodology based on the Residential, Office and Retail/Service Industry provisions in the Concept Plan. This is an indication of the numbers of parking bays and it is the methodology that is being applied for, not the number of parking bays shown.
### Table 18: Proposed parking

<table>
<thead>
<tr>
<th>Conradie BLMEP Land-use</th>
<th>Retail</th>
<th>Office / Service</th>
<th>Grant-funded Res</th>
<th>Res 1 (Ave. size: 43 m²)</th>
<th>Res 2 (Ave. size: 45 m²)</th>
<th>Res 3 (Ave. size: 58 m²)</th>
<th>Total (No. of bays)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factors</td>
<td>4 bay / 100 m² GLA</td>
<td>4 bay / 100 m² GLA</td>
<td>0.25 / DU*</td>
<td>0.75 / DU*</td>
<td>0.75 / DU*</td>
<td>0.75 / DU*</td>
<td></td>
</tr>
<tr>
<td>Phase 1</td>
<td>166</td>
<td>234</td>
<td>177</td>
<td>83</td>
<td>292</td>
<td>42</td>
<td>994</td>
</tr>
<tr>
<td>Phase 2</td>
<td>0</td>
<td>0</td>
<td>74</td>
<td>64</td>
<td>226</td>
<td>33</td>
<td>397</td>
</tr>
<tr>
<td>Phase 3</td>
<td>218</td>
<td>355</td>
<td>200</td>
<td>121</td>
<td>426</td>
<td>61</td>
<td>1382</td>
</tr>
<tr>
<td>Total**</td>
<td>384</td>
<td>589</td>
<td>451</td>
<td>269</td>
<td>945</td>
<td>136</td>
<td>2774</td>
</tr>
<tr>
<td>Minus Shared parking bays (90% of non-residential)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>875</td>
</tr>
<tr>
<td>Total parking bays required</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1899</td>
</tr>
</tbody>
</table>
3.10.4  Land uses

The proposed land use distribution allows for a framework that remains adaptable to future market demand while simultaneously establishing requirements that ensure an appropriate land use balance. Please refer to the Cape Town Zoning Scheme contained within the Municipal Planning By-Law 2015, for the detailed description on permitted and restricted land uses and zonings. This application is an application for subdivisional area. However, the most logical base line land use would be Mixed Use Zoning 2 (MU2) for all land development units in future sub-divisions, other than streets and designated Open Space which would be either Open Space Zoning 2 or 3. (OS2 or 3)

Mixed Use 2 allows for uses as per Table 3.

3.10.4.1  Retail, Service Industry and Office.

The provision of retail, service industry and office space is primarily to serve the future population of the Conradie site and not intended as a retail, service industry or office destination. However, it is likely to serve at the least the Mupine development across the road as well. Thus the provision of non-residential space is about 15% of the total bulk.

The retail space is located on ground level along Forest Drive and could therefore also accommodate most service industry activities if needed. The other area where retail could occur is in the public square/plaza. In this application, appropriate land uses in the “retail” classification are: activity street retail units that service the local needs of the residents restaurants and cafes. Restaurant business land uses are great uses to locate around medium to small sized public open spaces. Outdoor restaurant seating creates a setting for people to enjoy the character and beauty of the development.

3.10.4.2  Open Space Guidelines

Open Space play a critical role in establishing a vibrant, beautiful and livable neighborhood. These spaces can provide a wide variety of passive and active recreational experiences ranging in size and type as well as a vital storm water attenuation function. Open spaces should be designed to fulfill a variety of functions as safe multi-modal corridors, outdoor living rooms and green layers for the Precinct. Together they create an integrated system enhancing livability, natural appearance, and ecological values while providing gathering places and interaction opportunities for the community and visitors to the area. Open Space classifications are based on the size of the space, types of land use adjacent to the site and its location in the Precinct.

Linear Spaces and Linkages

Linear Parks and linkages are built connections or natural corridors linking urban spaces together. The Elsieskraal River Park, which is a linear shape is ideal for non motorised modes of recreational movement such as walking, jogging and bicycling. Ideally the link along this corridor can be extended through connections to other open spaces in the vicinity.
Plaza / Square

Plazas and squares usually occur at the intersection of important streets and support civic and commercial activity with landscape consisting of durable pavement and formal tree plantings. A plaza/square is usually bordered by civic or private buildings and range from very active places with adjacent complementary uses such as restaurants and cafes, to quiet areas with seating, formal landscape plantings, and amenities such as fountains or public art. The following are suggested features to consider in the design:

The size of the space and the siting and massing of adjoining buildings to produce spaces with a strong sense of enclosure.

Ground-floor space of facing buildings should be devoted to retail, restaurant and other consumer-oriented uses to increase the level of use and sense of activity within the plaza/square.

1. Provide seasonal choices of sun or shade.
2. Accommodate the use of the outdoor space by adjoining businesses.
3. Extensive use of paved surfaces is appropriate and may be complemented by trees and ground cover that provides visual contrast.
4. Water features are encouraged to provide visual interest, for their cooling effect, and for noise attenuation.
5. Ample seating areas should be provided including walls, ledges, raised surfaces, or simply space to allow for movable seating.

Semi - Private Open Space

Residential developments should provide semi-private open space at grade, or on roofs with a possible minimum size of six (6) square metres per unit where feasible. Wherever possible, semi-private open space should be designed to be visually accessible from the street to enhance public safety.

Private Open Space

Each unit of a residential development should be provided private open space in the form of balconies, decks, patios, or porches in the following manner:

1. When possible, private open spaces should take advantage of views.
2. Visual privacy should be maintained in the design of private open spaces.
3. Balconies should overlook public spaces such as paths, plazas and open spaces to add activity and surveillance (See Figure 77 and Figure 78).
Figure 77: Street Interface A

Figure 78: Street Interface B
Pedestrian Pathways

A pedestrian passage should follow at least the minimum standards provided by the City of Cape Town for sidewalks and may be hard-scape or heavily landscaped and act as a public park as well.

Create a buffer to separate pedestrians from moving vehicles using street furniture, trees, and other sidewalk infrastructure. Provide seating, and other sidewalk infrastructure that support increased frequency and duration of walking. Provide exterior lighting along streets and outdoor paths. Retain existing trees where possible or include new trees to provide shade and visual interest on streets and sidewalks. Make sidewalk widths consistent with their use. Provide for enhanced pedestrian crossings both at mid-block and at intersections. Support physical activity among people with disabilities by making streets and paths universally accessible.

Landmarks / Gateways

Where a building site is identified as adjacent to the heritage gateway precinct, the architect must acknowledge both the significance of the gateway and the existence (if any) of other buildings relating to the gateway.

3.10.4.3 Safety and Security

Crime prevention through design is the base of any Safety and Security strategy.

Natural surveillance

Natural surveillance increases the threat of apprehension by taking steps to increase the perception that people can be seen. Natural surveillance occurs by designing the placement of physical features, activities and people in such a way as to maximize visibility and foster positive social interaction among legitimate users of private and public space. Potential offenders feel increased scrutiny and limitations on their escape routes.

1. Place windows overlooking sidewalks and parking lots.

2. Leave window shades open.

3. Use passing vehicular traffic as a surveillance asset.

4. Create landscape designs that enhance surveillance, especially in proximity to designated points of entry and opportunistic points of entry.

5. Use transparent weather vestibules at building entrances.

Lighting

When creating lighting design, avoid poorly placed lights that create blind-spots for potential observers and miss critical areas. Ensure potential problem areas are well-lit: pathways, stairs, entrances/exits, parking areas, ATMs, phone kiosks, mailboxes, bus stops, children’s play areas, recreation areas, pools, laundry rooms, storage areas, dumpster and recycling areas, etc.
Avoid too-bright security lighting that creates blinding glare and/or deep shadows, hindering the view for potential observers. Eyes adapt to night lighting and have trouble adjusting to severe lighting disparities. Using lower intensity lights often requires more fixtures.

Use shielded or cut-off luminaires to control glare.

Place lighting along pathways and other pedestrian-use areas at proper heights for lighting the faces of the people in the space (and to identify the faces of potential attackers).

Natural surveillance measures can be complemented by mechanical and organizational measures. For example, closed-circuit television (CCTV) cameras can be added in areas where window surveillance is unavailable.

**Access control**

Natural access control limits the opportunity for crime by taking steps to clearly differentiate between public space and private space. By selectively placing entrances and exits, fencing, lighting and landscape to limit access or control flow, natural access control occurs.

1. Use a single, clearly identifiable, point of entry
2. Use structures to divert persons to reception areas
3. Incorporate maze entrances in public restrooms.
4. Avoids the isolation that is produced by an anteroom or double door entry system
5. Use low, thorny bushes beneath ground level windows.
6. Eliminate design features that provide access to roofs or upper levels

**Territorial reinforcement**

Territorial reinforcement promotes social control through increased definition of space and improved proprietary concern. An environment designed to clearly delineate private space does two things. First, it creates a sense of ownership. Owners have a vested interest and are more likely to challenge intruders or report them to the police. Second, the sense of owned space creates an environment where “strangers” or “intruders” stand out and are more easily identified. By using buildings, fences, pavement, signs, lighting and landscape to express ownership and define public, semi-public and private space, natural territorial reinforcement occurs. Additionally, these objectives can be achieved by:

1. Assignment of space to designated users in previously unassigned locations.
2. Maintaining premises and landscaping such that it communicates an alert and active presence occupying the space.
3. Providing trees in residential areas. Research results indicate that, contrary to traditional views within the law enforcement community, outdoor residential
spaces with more trees are seen as significantly more attractive, safer, and more likely to be used than similar spaces without trees.

4 Display security system signage at access points.

5 Avoiding razor-wire fence topping, as it communicates the absence of a physical presence and a reduced risk of being detected.

6 Placing amenities such as seating or refreshments in common areas in a commercial or institutional setting helps to attract larger numbers of desired users.

7 Scheduling activities in common areas increases proper use, attracts more people and increases the perception that these areas are controlled.

Territorial reinforcement measures make the normal user feel safe and make the potential offender aware of a substantial risk of apprehension or scrutiny.

3.10.4.4 Architectural and Landscape guidelines

Visually, the interface with Forest Drive Extension is of special significance as the “frontage” to the project and as a reference to the future development of Mupine across the road.

1 Selected trees of strong visual appeal, are to be retained where possible.

2 Trees to be removed should be retained as long as possible as a mitigation during the construction phases.

3 Tree and screen planting should be integral to the building and open space development facing Forest Drive.

4 Necessary fencing is to be visually permeable and be implemented in such a way that there is no sense of being a solid barrier between the road and the new development.

5 The buildings are not to be monolithic but their faces are to be broken up by the use of steps in the facades, balconies, interesting textures etc. so that the perceived bulk is reduced.

6 Signage is to be strictly limited with no large billboards, brightly coloured or large neon or uplit signs. It is proposed that all signage is designed within the parameters of a design manual.

7 Street lighting must be shielded so that only the area needing to be lit is lit. Light pollution and spillage must be kept to a minimum.

8 The up-lighting of buildings is not appropriate.

9 Buildings should offer as much interaction with the pedestrian pathways and streets as possible (See Figure 77 and Figure 78).
Annexures
Annexure A Power of Attorney from Western Cape Government and City of Cape Town
Annexure B Surveyor General’s Diagram
Annexure C Title Deed
Annexure D Letter of Support DoT
Annexure E Relevant Planning Frameworks
Annexure F Heritage Impact Assessment including Visual Impact Assessment
Annexure G Engineering Services Impact Assessment
Annexure H DEADP Confirmation of (2/12 and 17/2) Environment Authorisation
Annexure I DWS Communication GA Condition
Annexure J TIA
Annexure K Socio-Economic Impact Assessment
Annexure L Sustainability Impact Assessment