

4.3 Identification of Environmental Management Zones

The study area was delineated into sub-areas or environmental management zones to represent the priorities spatially; delineation was based on the following criteria:

- Sensitive environmental features and attributes that would need development control to ensure they are used wisely and protected from harm; and
- Characteristics of the man-made environment that would need development control to minimize potential land use conflicts

The purpose of these zones is to provide a management focus and to steer stakeholders towards the desired outcome. In addition, the zones are used to provide guidance for activities which may have a significant impact on attributes and those that would not.

The environmental management zones which were proposed during the desired State of Environment Phase were slightly reworked to produce eight environmental management zones (**Figure 49**). A ninth management zone (**Figure 50**) was identified to accommodate hydrological and ecological linkages and corridors but was not included in the EMF Zones Map due to uncertainties about the final spatial boundaries.

Land use statistics of the various environmental management zones are summarized in the table below.

The next section describes and identifies the constraints, opportunities, and potential conflicts in each of the zones.

Table 12: Environmental Management Zones

ENVIRONMENTAL MANAGEMENT ZONES		
ZONE	SURFACE AREA	PERCENTAGE
ZONE 1: Lake Areas	3144.580766	12.74489191
ZONE 2: Floodplain Area	6357.924536	25.76847821
ZONE 3: Estuary, Marine and Seashore Area	3847.472455	15.59369092
ZONE 4: Dune Cordon	1064.7569	4.315427908
ZONE 5: Coastal Plain Residential Area	4429.801311	17.95385238
ZONE 6: Coastal Plain Subsistence Farming Area	348.2466877	1.411433422
ZONE 7: Coastal Plain Commercial-Industrial Area	3965.234851	16.07097839
ZONE 8: Coastal Plain External Linkages	1515.246021	6.141246856
TOTAL	24673.26353	100%

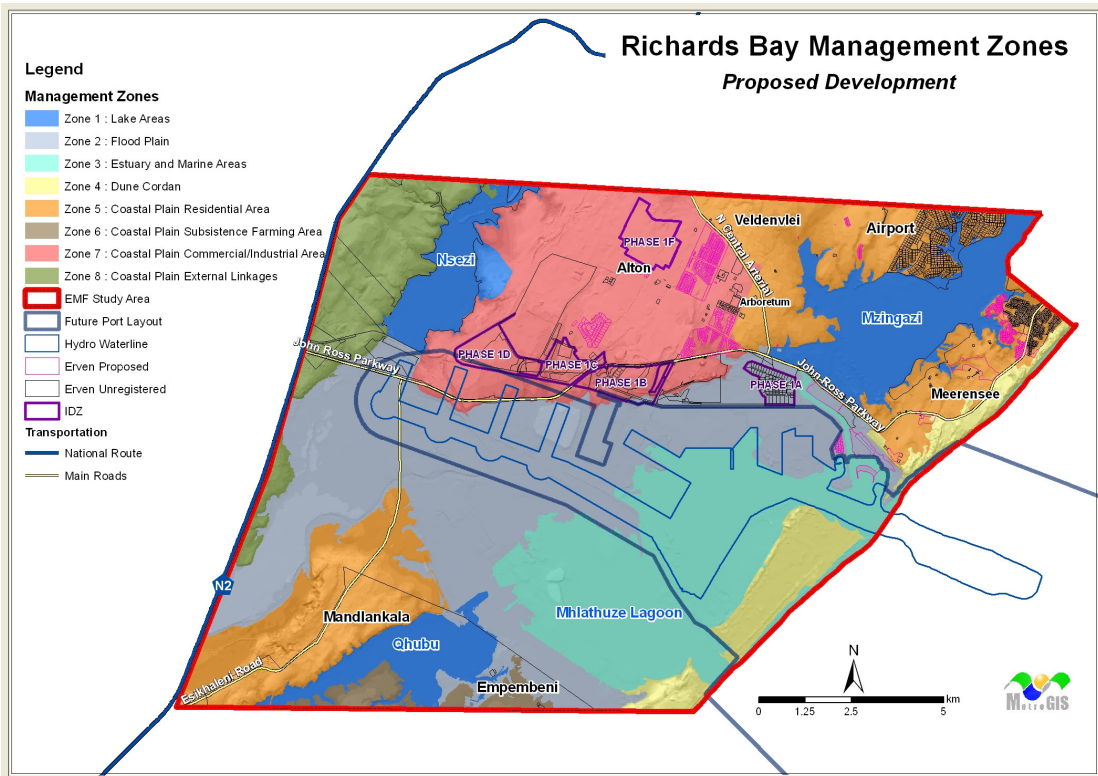


Figure 49: Environmental Management Zones

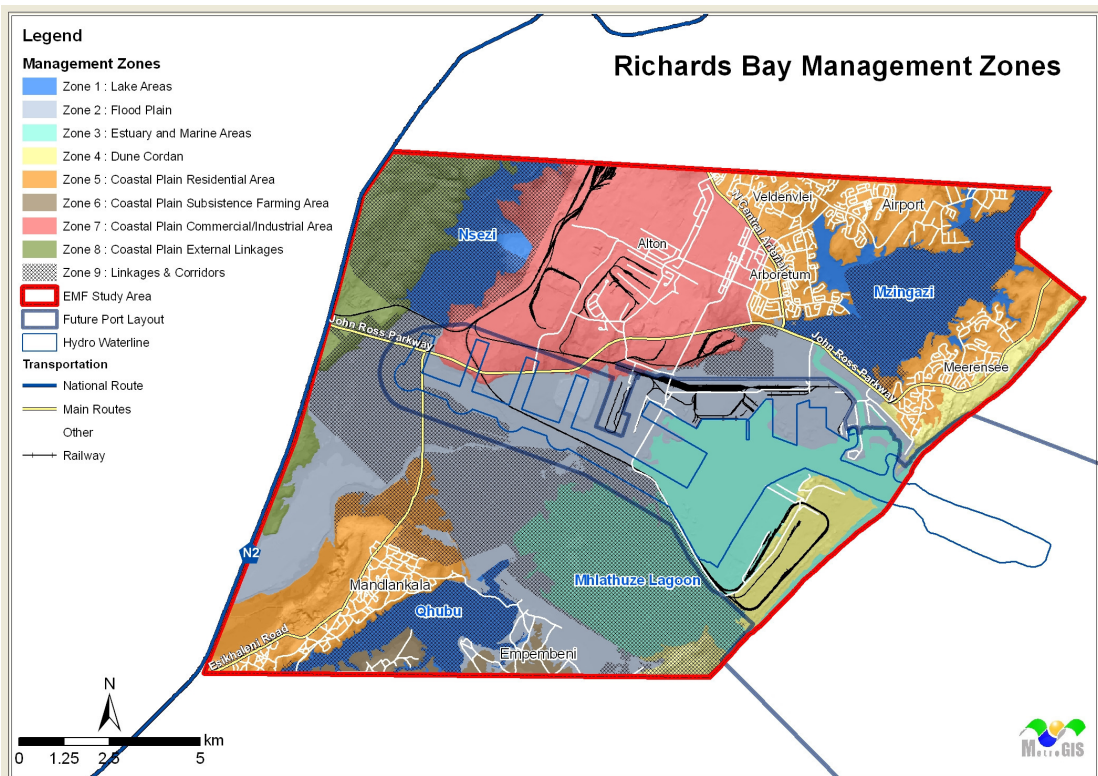


Figure 50: Proposed 'Linkages and Corridors' Management Zone

4.4 Opportunities and Constraints (Zones)

The purpose of this section is to identify the attributes that are sensitive and important and the priorities that require proactive management measures.

The facts gathered during the status quo were translated and is spatially represented in each zone map by an environmental sensitivity value. The values identify areas which are more susceptible to change than others and it helps to define the areas that would need stringent or less stringent development control. The proposed land use is also spatially represented in each zone map to identify development pressures. This report places emphasis on the zones that represent the main development pressures in the area.

The distinctiveness of the landscape in the study area presents a combination of sensitive attributes that offers a wide variety of opportunities and constraints that are not necessarily restricted to any specific management zone. Some of these are highlighted in the table below and serve to remind the decision-maker to keep the big picture in mind when interpreting the situation in the area. There are also forces *external* to the study area associated with global change that has the potential to change the current situation.

Table 13: Opportunities and Constraints in the Study Area

OPPORTUNITIES	CONSTRAINTS
<p>The study area's geographical position creates a climate regime that is highly suitable for human settlements. The pleasant sub-tropical coastal conditions have created significant diversity and a variety of opportunities for human development and economic growth.</p> <p>The year round subtropical climate conditions offer opportunities for tourism. When coupled to the unique landscape features in the area, including the warm ocean, beaches, nature reserves and general scenic beauty these opportunities become more prominent.</p>	<p>These same conditions are also sensitive to change that may occur in the world's climatic conditions. For example, changes in the sea surface temperatures over the oceans due to global warming will influence atmospheric circulation responses, and consequently rainfall and temperature patterns over the region. Changes in the prevailing climate will affect local diversity and opportunities. Mention has been made of possible increases in extreme weather that could lead to major destruction and loss of life. There is growing evidence of rising sea levels which would impact the harbour and low lying areas of the region.</p>
<p>The unique landscape features and processes have a level of resilience that enables it to respond to severe stresses and adapt to change.</p>	<p>Large-scale transformation has already occurred since the construction of the port and harbour and while the landscape will probably be able to rectify itself again there is no guarantee that this will be to the advantage of the socio-economic systems that occur in the area.</p>
<p>The geomorphic landscape has been created by the wind and water in the region.</p>	<p>Any development that will impede or enhance the wind speed or direction and the runoff will impact on the opportunities of the region.</p>
<p>The prevailing winds provide a significant level of ventilation</p>	<p>The high incidence of berg winds and land-sea breezes do increase the pollution levels for different sectors of the community. The increase in development has already had a major impact on the air quality</p>
<p>There is potential for wind energy harvesting.</p>	<p>Space may be a limitation.</p>
<p>The generally high rainfall provides a significant proportion of the main water resources which increases the level of water security for the region. The high humidities moderate the level of evapotranspiration but still constitute a very large proportion of the water use in the region.</p>	<p>The large variability of rainfall in the region creates problems for water supply management. There have been several extremely large rainfall periods with over 2000 mm in a year and other periods of severe drought with less than 750 mm.</p>
<p>The proximity of the area to the sea offers some opportunities for desalination to support the water resources.</p>	<p>Desalination would require large input of energy which is a serious constraint in the country.</p>