Saldanha Development Zone
Pre-Feasibility Analysis

FINAL REPORT:

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SOUTH AFRICAN PROPERTY OWNERS ASSOCIATION (SAPOA)

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TABLE OF CONTENT

EXECUTIVE SUMMARY .......................................................................................................................... ï
CHAPTER 1 INTRODUCTION.................................................................................................................. 1
  1.1 PURPOSE OF STUDY ...................................................................................................................... 1
  1.2 STUDY AREA DELINEATION ........................................................................................................ 1
  1.3 STRUCTURE OF REPORT ............................................................................................................ 2
CHAPTER 2 IDZ PROFILING AND DEVELOPMENT ZONE LOCATION ASSESSMENT ...... 4
  2.1 INTRODUCTION .......................................................................................................................... 4
  2.2 DEFINING CORRIDORS / NODES / PRECINCTS ........................................................................... 4
  2.3 CONCEPT OF AN INDUSTRIAL CORRIDOR .................................................................................... 7
  2.4 CONCEPT OF INDUSTRIAL DEVELOPMENT ZONES (IDZ) .......................................................... 8
  2.5 CONCEPT OF INDUSTRIAL PARKS .............................................................................................. 13
  2.6 CURRENT THINKING OF DTI IN TERMS IF IDZs ........................................................................... 15
  2.7 STUDY AREA IN CONTEXT ........................................................................................................... 19
  2.8 SYNTHESIS ................................................................................................................................. 22
CHAPTER 3 SALDANHA ECONOMIC PROFILE ........................................................................... 24
  3.1 INTRODUCTION .......................................................................................................................... 24
  3.2 REFERENCE FRAMEWORK .......................................................................................................... 25
  3.3 MACROECONOMIC OVERVIEW .................................................................................................. 26
  3.4 LOCAL ECONOMIC TRENDS ....................................................................................................... 28
  3.5 SYNTHESIS ................................................................................................................................. 39
CHAPTER 4 LOCAL MARKET PROFILE .................................................................................... 40
  4.1 INTRODUCTION .......................................................................................................................... 40
  4.2 MARKET AREA DEMOGRAPHICS ............................................................................................... 40
  4.3 SYNTHESIS ................................................................................................................................. 46
CHAPTER 5 INDUSTRIAL MARKET ANALYSIS .......................................................................... 47
  5.1 INTRODUCTION .......................................................................................................................... 47
  5.2 CORE INDUSTRIES WITHIN THE SALDANHA BAY MUNICIPAL AREA ................................... 48
  5.3 KEY SECTORS/ANCHORS, DOWNSTREAM OPPORTUNITIES AND INDUSTRIAL
      CLUSTER IDENTIFICATION ........................................................................................................ 53
  5.4 IMPORTANCE OF INDUSTRIAL CLUSTERS ............................................................................. 92
  5.5 INDUSTRIAL DEVELOPMENT IMPACT ON TOURISM ................................................................. 93
  5.6 INDUSTRIAL BUILDING PLANS PASSED AND BUILDINGS COMPLETED ............................ 95
  5.7 INDUSTRIAL LOCATIONAL FACTOR ANALYSIS ....................................................................... 96
  5.8 INDUSTRIAL NET SPACE DEMAND MODELLING ...................................................................... 100
  5.9 CONCLUDING REMARKS AND RECOMMENDATIONS ............................................................ 104
  5.10 CLUSTER/ SECTOR PRIORITIES FOR THE SALDANHA BAY MUNICIPALITY ..................... 108
5.11 SYNTHESIS ...........................................................................................................109

CHAPTER 6 PHYSICAL ENVIRONMENT ASSESSMENT ..............................................110
6.1 INTRODUCTION .......................................................................................................110
6.2 SPATIAL ANALYSIS AND IMPLICATIONS .............................................................110
6.3 INFRASTRUCTURE .................................................................................................121
6.4 INFRASTRUCTURE – SALDANHA MUNICIPAL PERSPECTIVE ............................141
6.5 ENVIRONMENTAL ISSUES AND ANALYSIS ......................................................149
6.6 DEVELOPMENT PERSPECTIVE: OPPORTUNITIES AND CONSTRAINTS .............155

CHAPTER 7 BEST PRACTICE ANALYSIS: CASE STUDIES .................................157
7.1 INTRODUCTION .......................................................................................................157
7.2 INTERNATIONAL EXPERIENCE ............................................................................158
7.3 LOCAL EXPERIENCE ..............................................................................................184
7.4 SWOT ANALYSIS ...................................................................................................201
7.5 CHECKLIST FOR AN IDZ .....................................................................................204
7.6 PRACTICAL INDICATORS FOR DEVELOPING THE SALDANHA IDZ ...............206
7.7 IMPERATIVES FOR ESTABLISHING AN IDZ IN SALDANHA ..............................208
7.8 DEVELOPMENT FINANCE / INCENTIVES ..........................................................211
7.9 SYNTHESIS ............................................................................................................216

CHAPTER 8 PRE-FEASIBILITY ASSESSMENT ON THE ESTABLISHMENT OF AN IDZ 218
8.1 INTRODUCTION .......................................................................................................218
8.2 SALDANHA DEVELOPMENT ZONE STRUCTURES AND LAYOUT ....................218
8.3 COSTING .................................................................................................................222
8.4 ECONOMIC IMPACT ASSESSMENT ......................................................................226
8.5 SYNTHESIS .............................................................................................................231

CHAPTER 9 RECOMMENDATIONS AND WAY FORWARD ......................................233
9.1 INTRODUCTION .......................................................................................................233
9.2 HOW DOES A REGION GO ABOUT DEVELOPING AN IDZ .................................233
9.3 CRITICAL SUCCESS FACTORS AND GUIDELINES ............................................234
9.4 DEVELOPMENT PHASING .....................................................................................240
9.5 RECOMMENDATIONS AND WAY FORWARD .....................................................241
9.6 SYNTHESIS ............................................................................................................243

LIST OF REFERENCES .................................................................................................245

ANNEXURES A, B, C .....................................................................................................249
1 SECTION ONE: INTRODUCTION

Demacon Market Studies, Bigen Africa Services and Plan Associates were commissioned by WESGRO (on behalf of the Department of Economic Development and Tourism) to undertake the task of conducting an Economic and Technical Pre-feasibility Study for an Industrial Development Zone (IDZ) within the proposed Saldanha Industrial Area (i.e. “corridor” as indicated by the SDF).

The pre-feasibility study will investigate the potential to stimulate further industrial and business activities as well as to link these and current activities to the benefits of the proposed Saldanha Development Zone. The Saldanha Development Zone could be seen as the missing link in connecting the various industries and harbours of the surrounding areas.

The report was structured as follows:

- Chapter Two: IDZ Profiling & Development Zone Location Assessment
- Chapter Three: Saldanha Economic Profile
- Chapter Four: Local Market Profile
- Chapter Five: Focused Industrial Market Analysis
- Chapter Six: Physical Environment Analysis
- Chapter Seven: Best Practice Analysis – Case Studies
- Chapter Eight: Pre-Feasibility Assessment on the Establishment of IDZ
- Chapter Nine: Recommendations & Way Forward

2. SECTION TWO: IDZ PROFILING & DEVELOPMENT ZONE LOCATION ASSESSMENT

In this chapter the difference between an Industrial Corridor, Industrial Development Zone (IDZ) and Industrial Parks was identified.

Concept of an Industrial Corridor:
A Corridor may be seen as a concept to elevate an area to a certain level of development. The area must have the potential to develop, on the condition that the entire area must take part in the process. The development of a corridor is aimed firstly at developing the region from the inside, and then making contact and developing further extensions with adjoining regions from there. A Corridor is therefore a multi-dimensional strategy that further strengthens and supports the chosen area’s internal development networks. According to Friedman (1966), a Corridor consists of a narrow zone along important connecting routes between different cores. Economic activities within such regions are less concentrated, but have the capacity to expand. The main points of such a corridor must be developed to such an extent that they can propel the development, but must not be situated too far apart.

Concept of and Industrial Development Zone (IDZ):
The Industrial Development Zone (IDZ) Programme of the South African Department of Trade and Industry (DTI) is designed to encourage international competitiveness in
South Africa’s manufacturing sector. An **IDZ is a purpose-built, industrial estate linked to an international airport or port**, which contains a controlled Customs Secured Area (CSA). A CSA is exempt from duties, VAT and import duty on machinery and assets.

In keeping with international trends in export-oriented zone development, the DTI provides an enabling business environment that facilitates **quick decision-making processes, attractive benefits** and **high quality inputs** at competitive rates, as well as labour standards that give **easy access to world markets**. As a result of globalisation, ports and airports are changing so that they can cater for increased economic activity and facilitate access to foreign markets for business people and manufacturers. The IDZ Programme provides facilities and services tailored for export-oriented industries.

**Concept of Industrial Parks:**

An Industrial Park is a tract of land use because of location, topography, proper zoning, availability of utilities and accessibilities to transportation. The uses permitted are regulated by protective minimum restrictions, including size of site, parking and loading requirements, and building setback lines from front, side and rear yards. The front yards, and side yards adjacent to streets, are to be landscaped in conformance to planning standards set for the park. All requirements are to be compatible with the community and surrounding land uses in accordance with a comprehensive plan to enable a group on industries to operate within it efficiently (Kinnard et al.1979:486).

The most important activities which can be established in an industrial park are industries, processing, warehouses and distribution depots, offices, commercial functions, research and development.

### 3 & 4 SECTION THREE & FOUR: SALDANHA ECONOMIC AND SOCIO-ECONOMIC PROFILE

#### LOCAL ECONOMIC AND SOCIO-ECONOMIC TRENDS

<table>
<thead>
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<th>Table 1: Key economic indicators of the market area</th>
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<tr>
<td><strong>Saldanha Bay Municipal Area Economic Indicators</strong></td>
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<td><strong>GDP</strong></td>
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<td><strong>Dominant Sectors</strong></td>
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<td><strong>Economic Growth</strong></td>
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<td><strong>Final Consumption</strong></td>
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<td><strong>Expenditure &amp; Disposable Income Growth Rate</strong></td>
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<td><strong>Formal employment</strong></td>
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Table 2: Key socio-economic indicators of the market area

<table>
<thead>
<tr>
<th>Variable</th>
<th>Saldanha Bay Municipal Market Area Characteristics (2008)</th>
</tr>
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<tbody>
<tr>
<td>Population size</td>
<td>95 634 people, 26 675 households</td>
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</table>
| Highest level of education| 38% - Some secondary education  
22.4% - Grade 12 / St 10  
17.2% - Some primary education  
7.6% - Higher  
5% - No schooling                                                          |
| Level of employment       | 78.7% - Employed  
21.3% - Unemployed  
67.3% - Economically active                                                   |
| Occupation profile        | 31.9% – Elementary Occupations  
12.7% - Craft and related trades workers  
10.8% - Plant and machine operators and assemblers  
10.6% - Clerks  
9.3% - Service workers; shop and market sales workers                        |
| Average household income  | 28% - earn between R2 and R29 253 p.a.  
39.5% - earn between R29 255 and R117 015 p.a.  
2% - earn above R468 052  
10.9% - No income at all  
Weighted average annual household income all LSMs is R96 976 p.a. and R8 081 p.m. |
| LSM Profile               | 32.1% (majority) – LSM 1-3                                                                   |

5 SECTION FIVE: INDUSTRIAL MARKET ANALYSIS

This section of the report focuses on the industrial market segment, with the objective of estimating the development potential within the designated area of Saldanha Bay. In order to reach this objective, the demand for development within the market area should be identified and assessed in light of current trends. Subsequent sections provide a concise overview of the industrial market within the Saldanha Bay Municipal area in terms of the following aspects:

- Core Industries within the Saldanha Bay Municipal Area
- Key Sectors / Anchors, Downstream Opportunities and Industrial Cluster Identification
- Industrial Net Space Demand Modelling
- Concluding Remarks and Recommendations

Note: The various sectors, development opportunities and clusters that will be discussed throughout this section, will not be discussed in any particular order. Not all of these industries / clusters will develop within the Saldanha Bay Municipal area and are merely potential projects that were identified through various sources and interviews. Further investigations and feasibility studies will have to be undertaken in the next phase (feasibility phase) in order to identify which projects will be most suitable for the Saldanha Bay Municipal area. All future plans and possible proposed projects will depend on the findings of the EMF (Environmental Management Framework) and will have to be aligned accordingly.
Core Industries within the Saldanha Bay Municipal area:
Saldanha has a strong manufacturing industry, but the town also developed into a fullyfledged harbour town, as well as a commercial and institutional core (especially in terms of the Military Academy, Special Forces and Navy). The economy is based on the manufacturing industry, agricultural / fishing industry, tourism industry and harbour industries. In this regard there are large fish factories, processing plants and the Saldanha Steel plant.

Situated within the Saldanha municipal area are various well-known national companies such as Sea Harvest, Southern Seas Fishing, Saldanha Steel (currently known as Arcelor Mittal, but for the purposes of this report still referred to as Saldanha Steel), Namakwa Sands (currently known as Exxaro, but for the purposes of this report still referred to as Namakwa Sands) and Dufeco, only to mention a few. The most important natural assets are the mineral and fish resources, while the important infrastructural advantage is the deep-sea harbour. This harbour has developed as an iron-ore export facility, while the possibility of developing a waterfront is under investigation for the near future. Ultimately this harbour could relieve the pressure on Cape Town and both of the above mentioned hold possible future growth potential for tourism development.

The industrial Companies on the West Coast range from iron and steel suppliers to fishing companies, from oil refurbishing to lumber suppliers. There is a concentration of heavy steel and mineral industries and supporting services within the Saldanha Bay Municipal area. Concentration has occurred due to the location of the Saldanha Harbour. In addition, this area is located next to the Saldanha / Sishen railway line which transports raw mineral materials, from north of the West Coast Region and Sishen where the majority of these minerals are mined, to Saldanha.

The most prominent industries currently operating in the Saldanha Bay Municipal area are Saldanha Steel and Namakwa Sands.

Key Sectors / Anchors, Downstream Opportunities and Industrial Cluster Identification
Various sectors / clusters were identified (through several interviews and meetings with the municipality, core industries, key stakeholders, the client etc.) for the Saldanha Bay Industrial Development Zone. Linkages of the various clusters with other sectors and services will also be identified throughout this section. The clusters that were identified which should be targeted for further investment could include the following (these clusters are not prioritised / discussed in any particular order):

- Renewable Energy Production and Manufacturing Cluster
- Dry Dock – Oil and Gas Cluster
- Maritime – Ship Building and Repair Cluster
- Steel Production and Manufacturing Cluster
- Minerals Production and Manufacturing Cluster

Renewable Energy Production and Manufacturing

a) Status Quo of Renewable Energy
South Africa is advancing its renewable energy drive. The Department of Minerals and Energy (DME) stated that the country is reaffirming its commitment to sustainable energy development as stated in the White Paper on Renewable Energy, which was approved by Cabinet in November 2004. The target set by the White Paper entails that South Africa will produce 10 000 GWh of electricity using renewable energy sources over the next ten years. This energy will be produced mainly from biomass, wind-power, solar-power and small-scale hydropower projects.

Parastatal electricity utility Eskom and the State-owned Central Energy Fund (CEF) will play a substantial part in the development and financing of these projects. CEF has established the Energy Development Corporation, which is to investigate opportunities in the field of renewable energy and prepare business cases for viable initiatives.

South Africa has an energy intensive economy, highly reliant on fossil fuels, and sees economic growth based on energy intensive industries as a key means to development. In the field of renewable energy resources, wind energy is the technology with the lowest production cost of electricity. This form of energy generation has increasingly become established in Europe, the USA and India. As South Africa is blessed with abundant wind energy, especially along its coastline, it makes sense to develop and apply existing technology to local conditions and needs.

The Government believes that renewable energy can in many cases provide the least cost energy services, particularly when the social and environmental costs are included, and will therefore provide focused support for the development, demonstration and applications of renewable energy. Furthermore, renewable energy would lead to the introduction of a new technology and possibly new industry into South Africa with a high potential for job creation (Wind Power having the greatest potential on that matter compared to the other), an important goal of Government.

Government Initiatives that has been taken already in terms of renewable energy:

- The Department of Minerals and Energy has actively developed the countries Renewable Energy framework. Wind is a key aspect.
- The Department of Minerals and Energy has established the Renewable Energy Finance and Subsidy Office (REFSO), whose mandate includes: The management of renewable energy subsidies; and offering advice to developers and other stakeholders on renewable energy finance and subsidies. This includes information on the size of awards, eligibility, procedural requirements, and opportunities for accessing finance from other sources.
- The Western Cape provincial government has completed its sustainable development conference at which they indicated that they want a target of 25% renewable energy by 2020. This amounts to 1 000MW. This is priority, as the province has a good wind regime (average 6,5ms at 10m)
- The City of Cape Town made a large commitment to renewable energy and has signed a PPA with the Darling IPP for 38c/kwh.

As can be seen from the above, renewable energy is of high priority in South Africa. In the Saldanha Bay Municipal area, most winds occur during May to September and November to February. Strong winds of over 20km/h are common in this area. During the winter months
the wind blows from a north-western direction and during the summer months from a south-eastern direction (Spatial Development Framework, 2008).

b) Identified Downstream Opportunities within the Renewable Energy Sector:

Various interviews were held with key stakeholders within this sector such as with Mr Peter Stuivenberg, lead consultant to the Saldanha Bay Municipality IDZ and related Maritime Hub, Mr James Fortuin, Municipal Manager for the Saldanha Bay Municipality and Mr Ralph Damonse from Genesis Eco Energy (he is currently involved with various Renewable Energy projects along the West Coast and the Western Cape) regarding possible downstream opportunities within this sector. The following opportunities were identified:

Projects identified by the Saldanha Bay Municipality
Mr Stuivenberg, lead consultant to the Saldanha Bay Municipality IDZ and related Maritime Hub, stated that a MOU has been signed between landowners, SHARP Japan and WindsSA (a joint venture of BlueH and Eagle) to build a 450 MW hybrid power plant which include a 200MW/year PV solar assembly plant. The project will create 1 200 direct jobs. Solar panel and wind turbine assembly plants will be created to produce for Sub Saharan Africa. The PV solar assembly plant will start with 25MW and will increase to 200MW/year. The wind turbine assembly and gearbox production unit will start with 100MW productivity and will increase to 500MW. The project turnover is estimated at US$1.2 billion. This clean industry will deliver in over 5 years approximately 3 500 jobs, mostly for unskilled labour.

Projects identified by Mr Ralph Damonse – Genesis Eco Energy:
Mr Damonse stated that their company is currently involved in major investment deals throughout South Africa regarding renewable energy – especially regarding wind energy. He also mentioned that Investec recently signed a deal with community members in Paternoster regarding the establishment of wind farms.

Genesis Eco Energy has identified a site (private sector land situated between Vredenburg and St Helena Bay) which they plan to use for the purposes of renewable energy. They plan to produce 500MW over the next four and a half years throughout the Western Cape, of which 150MW will be produced within the Saldanha Bay Municipal areas. The EIA process for this planned development will also be starting shortly.

Mr Damonse stated that if the South African wind industry grows to its full potential, further component construction activities could be set up and that Saldanha Bay, especially, has a lot of potential in terms of this. He stated that there will be various opportunities that can be established within the proposed IDZ regarding renewable energy, such as turbine manufacturing, blade manufacturing, renewable components manufacturing, assembly plants etc. He said that there is already a lot of interest from various investors for downstream manufacturing activities within the Saldanha Bay municipal area.

He stated that the best options for downstream opportunities regarding renewable energy within the proposed IDZ would be:

- Manufacturing of renewable components and assembly plants
- Service companies and warehouses to be situated within the IDZ
- Wind masts and testing.
**Dry dock - Oil and Gas**

**a) Status Quo of the Oil and Gas Sector**

The Offshore Oil and Gas industry in South Africa is spreading amongst many companies in the country. Therefore the National Ports Authority (NPA) plays a big role in providing an export corridor from the South African shores through its strategically placed ports in Cape Town and Saldanha Bay to the West African Market. The Saldanha area has been targeted to establish a support industry to service the West African Oil and Gas fields.

However, to establish such an industry some key constraints have to be solved among which are the following:

- Quality and service delivery of the South African oil and gas industry
- Quality, service delivery and costs of the South African Ports
- Attracting global role players to operate the repair facilities (such as dry docks) in order to guarantee quality, price, service delivery and to attract customers.

In 2004, the South African Oil and Gas Alliance estimated the value or market size for supplies and services to the West Africa exploration market at US$830 million or R5.4 billion offshore explorations. The offshore Oil and Gas industry comprises four main segments:

- Offshore exploration
- Supply and services to exploration firms: generic and specialised
- Production and processing of oil and gas
- Repairs and maintenance including modifications to floating offshore structures
- Fabrication and construction of new assets or exploration structures

The prospects within the oil and gas industry resulting from the discovery off the West Coast to the North of Saldanha Bay are very promising. This, as well as the existing fields off the West African Coast offers various opportunities for the manufacturing and services sectors. This could lead to first servicing the existing platforms and later manufacturing components, which will lead to further job opportunities within the area.

Saldanha Bay has an inherent competitive advantage due to its location on the strategic sea route and is thus strategically placed to add significant value to the industry especially in terms of a possible supply hub. The Saldanha Bay Municipal Oil and Gas hub will need a strong industry to service its needs. Some of the most important support industries are identified as follows:

- Logistics
- Ship repair
- Fabrication and construction
- Skilled labour for fabrication
- Engineering design
- Steel industry
- Labour Force
- Customs legislation
b) **Identified Downstream Opportunities within the Oil and Gas Sector:**

**Opportunities for oil and gas within the Industrial sector:** In the industrial sector gas can be used in two major fashions; as a feedstock and as a fuel. As a fuel, gas can be used in many ways, including steam rising, process heat, drying and metal working. Gas competes with coal or fuel oil in most cases but also with further refined fuels when the quality of heat is important (e.g. glass manufacturing). As a feedstock gas is mainly used in the production of fertilizers, methanol and petrochemicals. The direct reduction in the iron and steel industry is used as another feedstock application.

Three large project possibilities have been identified as the most likely large-scale users and beneficiaries following the introduction of gas. These projects were used as the basis for assessing potential industrial uptake and should be investigated further:

- **Hot Briquetted iron** – The possible second phase of Saldanha Steel could involve the use of lump iron ore from Sishen and natural gas to produce directly reduced iron in briquette form.
- **Cement** – A sizeable cement plant (Alpha Cement) has been planned for Saldanha, but at the moment it depends on aspects of permission (both for factory and mining operations) and market demand.
- **Ceramic tiles** – South Africa is currently a net importer of ceramic tiles. The West Coast area has the advantage of abundant supplies of high quality deposits of kaolin, quartz sand and limestone and a harbour.

**Projects identified by the Saldanha Bay Municipality:**

- Develop Saldanha Bay as a supply hub and fabrication centre for supplies and services, maintenance and new build projects for the offshore oil and gas community in West Africa.
- They also mentioned the necessity to develop a dry dock in the Saldanha Bay area in order to maintain oil rigs, service VLCCs, fabrication to take place, further construction, as well as the possibility of ship repairs.
- They mentioned that an electricity generation plant could be feasible wherever the gas is landed. An additional nuclear power plant will probably be situated in the southern parts of South Africa, but an electricity generation plant could possibly be developed in the Saldanha Bay area (possibly Hondeklip Bay) if the gas is landed there.

**Grinaker-LTA planned projects:** An interview was held with Mr Steve Hrabar, the Engineering Manager of the Mechanical and Electrical Business Unit of the Oil and Gas Division within Grinaker-LTA. He stated that they have various projects planned at the Saldanha Fabrication Facility within Saldanha Bay, but that it is very confidential at this stage due to final negotiations with their client. He also stated that we should keep this information confidential due to the sensitivity of the project.

He mentioned that the project consists of the possibility of a **modular oil refinery with related oil projects**. The project will consist out of 5 phases of which the first phase will contribute almost US$1.7 billion to the area and US$700 million will be for labour alone.
He also briefly mentioned other projects that are planned for the area and further possible opportunities which should be further investigated. They are as follows:

✓ PetroSA - with the possible development of a refinery in Coega, a proposal has been made for the refinery to be fabricated in modular form. These modules could be fabricated in Saldanha Bay and shipped to Coega for integration on the site. SASOL wants to build plants and export them to other countries.
✓ SASOL is selling its GTL technology to overseas countries. As a result, refinery plants have to be built where Sasol has to supervise the work and its technology. It has been proposed that these plants could be in modular form, built in Saldanha and exported to the country in question. This procedure has been done for ESCAVOS in Nigeria. These modules were built in the Middle East and shipped to Nigeria for integration into the overall plant.
✓ Saldanha as a supply hub for the offshore oil and gas community in West Africa.
✓ Dry docking
✓ Tank farm – there are currently no bunkering of ships in Saldanha Bay, due to the fact that they do not have bunker services.
✓ Forest Oil – Forest Oil have received a licence to develop the Ibhubezi Field on the West Coast of Africa. The final development would be three TLP’s (Tension Leg Platforms) and ninety-nine subsea modules. Depending on the size of the reservoir fabrication of this project could be done in Saldanha Bay for the TLP structures and the subsea modules.

Projects planned by the Port of Saldanha:

✓ Iron-ore Terminal Expansion
✓ OOOG (Offshore Oil and Gas Industry) Vessel Construction and Modification – Containers
✓ Ship Repair
✓ Bunkering services
✓ Recreational users
✓ Economic Processing Zones

Maritime Industry – ship building and repair

a) Status Quo of the Maritime Industry

The Maritime Transport Industry (MTI) constitutes economic activities that have some direct and indirect relationship with the sea. Several maritime activities are concerned with the exploitation of the resources of the sea and the seabed off South Africa’s shores. Many others are involved in some way or another with the sea trade on which the South African economy largely depends, whilst to some extent a variety of activities that derive their purpose from the supply of marine transport for different purposes.

Thus, the Maritime Transport Industry serves as an input into every other industry in the National economy as well as many of those across the South African borders. In addition cognisance is taken of the fact that the Maritime Transport Industry is a fairly complex one, with some companies in the sector, involved in business that fall outside the ambit of the Maritime Transport Industry.
The Maritime Transport Industry of the economy is often associated with shipping lines involved in the carriage of cargo as well as including associated services providers. More specifically, economic activities in South Africa which have maritime links, comprise amongst others the following:

- Enterprises concerned with the marine transport of cargo and services ancillary to such transport;
- Enterprises concerned with the manufacture, provision, maintenance and repair of marine equipment, including marine craft;
- The commercial ports system, authorities responsible for the provision and operation of navigational aids, including lighthouses;
- Institutions concerned with the rescue, salvage and anti-pollution operations;
- Government Departments and agencies concerned with international maritime relations, administration of maritime safety, the protection and conservation of the marine environment and law enforcement within South Africa’s offshore jurisdiction.

**Factors reducing competitiveness:**
Key factors impeding on South Africa’s and the Western Cape’s global competitiveness include the following factors:

- High cost of launching
- High cost and shortage of moorings
- High import duties
- Time consuming export / import administration
- Shortage of skills

**b) Identified Downstream Opportunities within the Maritime Industry:**

An interview was held with Mr Peter Stuivenberg, lead consultant to the Saldanha Bay Municipality IDZ and related Maritime Hub, regarding the Maritime Industry and the potential opportunities for Saldanha Bay associated with the industry.

He stated that the maritime transport sector could have huge potential for Saldanha Bay in terms of ship repair and pleasure craft boat building. He mentioned that this sector is very labour intensive and will need highly qualified craftsmanship, as well as national support. He mentioned that the water conditions in Saldanha Bay are suitable for building next to the water. He also stated that completing and fitting of the yachts in the water will be possible, which could save costs in terms of factory space. A facility to train the people should also be created within Saldanha Bay and the communities should be re-linked with the maritime industry. He stated that this industrial sector could capitalise upon existing markets in Europe and the United States. He also mentioned that the area between the Navy Base and Sea Harvest is ideal for the refurbishment of mega-yachts, once tapping into this market segment.

In addition to the above mentioned there are potentially spin-offs that could be created, such as:

- The establishment of multifunctional harbour (launching & mooring facilities) providing opportunities for diverse developments including:
  - Aligned industries e.g.:
The following downstream opportunities were identified through previous studies and documentations completed and are as follows:

- Boat and ship repair industry
- Supply and service industries to boat building
  - Yacht and small craft marina
  - Accommodation e.g.:
    - Hotels
    - Housing developments
  - Commercial precincts e.g.:
    - Retail outlets
- Promoting adventure tourism and charter industry:
  - Requiring a network of safe moorings around the coast

In terms of the opportunities of ship repair and boat building, this could be further investigated in future. According to the Provincial Department of Economic Development and Tourism, the majority of this sector will be situated in Cape Town. There are deep linkages within this sector with electronics, engineering etc., which could make it very difficult in terms of this to service the Saldanha Bay area.

The building of oil rigs in Saldanha Bay is a possibility which should be further investigated, also due to the fact that Cape Town wants to move that industry out within the short term. This could hold huge potential for the Saldanha Bay area in the future.

**Steel Production and Manufacturing**

*a) Status Quo of the Manufacturing Sector*

The Manufacturing sector has a very important role to play in the expansion and improvement of the Saldanha Bay Municipal economy. The manufacturing sector is one of the most important sectors within the municipality in terms of GGP, trade and employment and is well integrated into the district economy.

The Manufacturing Sector is the most dominant sector within the Saldanha Bay Municipal area as it contributed 32.9% to the GGP (R751 million in 2007) and contributed almost 49% to the District economy, which illustrates its importance to the West Coast economy. The disaggregation of the Manufacturing sector shows the dominance of the metal products (54.2%) and food and beverage (31.7%) subsectors. These two sectors alone account for over 80% of Manufacturing.

The manufacturing sector is through its inherent nature a very important sector in a given economy. It provides a host of employment opportunities, investment opportunities, and opportunities for small entrepreneurs to start their own businesses, and it serves as a catalyst for economic growth. Industries usually attract similar industries as well as other concerns that provide inputs to, or utilise outputs from a given industry. If the market is sound, this situation usually leads to sustainable economic growth, not only in the manufacturing sector, but with a spin-off effect on the whole economy.

*b) Identified Downstream Opportunities within the Manufacturing Sector:

The following downstream opportunities were identified through previous studies and documentations completed and are as follows:
✓ Food processing and packaging
✓ Metal processing
✓ Non-ferrous metal beneficiation
✓ Stainless steel fittings, wire and kitchen ware
✓ The assembly of earthmoving, mining and food processing equipment
✓ The manufacturing of tools, stainless steel, ceramic sanitary ware and tiles.
✓ The assembly of light transport equipment for entertainment and sport purposes (micro-lights, bicycles and motorcycles, jet-skis, rubber-ducks, catamarans and accessories, etc)
✓ Container manufacturing
✓ Generic electrical and non-electrical motors and generators
✓ Training and education projects that focuses on the provision of general skills and techniques in manufacturing etc.
✓ Projects focusing on the recycling of used products (development of a recycling plant that uses old equipment, materials, etc as inputs in the production of new products) – Industrial Ecology to take place within the IDZ.
✓ Technology and skills development, especially engineering services & training
✓ Metal fabrication and engineering
✓ Storage and warehousing facilities needed
✓ Containers and container manufacturing
✓ Increase footprint in energy sector
✓ Renewable energy – wind farms, manufacturing of blades, turbines, assembly plant
✓ Maritime Industry – ship repairs, fabrication, maintenance
✓ Dry dock – supply and services

Various interviews were held with key stakeholders within this sector such as Saldanha Steel (Arcelor Mittal) and the Saldanha Bay Municipality regarding possible downstream opportunities for this sector. The following opportunities were identified:

**Saldanha Steel**: Arcelor Mittal acquired Trident Steel recently in order to add value to their company. In terms of this a **Pod Mill** could be a possibility for the Saldanha Bay area, but it needs to be located close to the market. A **Pipe Mill** could also be a possibility for the area, but in terms of transport it could be difficult. Saldanha Steel also mentioned that they produce slit coil which could be sold locally to pipe makers. They only have a few local customers which means that this could also be a possible opportunity for local companies in terms of **pipe making**.

The pellets that Saldanha Steel uses are imported from South America and are very expensive to import. A possible opportunity for the Saldanha area is thus to establish a **Pelletisation Plant**, where they could produce their own iron pellets from the ore. Saldanha Steel stated that this will benefit them hugely.

Saldanha Steel also mentioned that they currently have to buy liquid petroleum gas. In terms of the possible **oil and gas development** they mentioned that it would be very beneficial to them if that development were to happen. The volume of gas that they would acquire is approximately 40 000 tons+ per month and if they, however, do acquire gas they will also increase their Midrex output.

Saldanha Steel stated that **containers** are urgently needed within the Saldanha port.
area. They stated that they containerise locally, but they also send approximately 2,000 tons per month via Cape Town. They stated that they won’t be able to do that for very much longer due to the port at Cape Town becoming congested.

Manufacturing related opportunities and potential projects identified by Wesgro and the Saldanha Bay Municipality a few years ago - that could still be feasible in future:

✓ Steel Pipe and tube manufacturers (casing and tubing pipe)
✓ A Ferro-alloy Plant
✓ Alpha Cement Plant: This is still being seriously proposed and considered by the Saldanha Bay Municipality
✓ The pelletisation plant: This could still be a very viable option for Saldanha Bay as mentioned earlier.
✓ Manganese Ore – There is the potential for beneficiating the Manganese ore from Sishen which is currently transported to and processed in Gauteng and then shipped to the East Coast. It could be more cost effective to transport and process the ore in Saldanha prior to export.
✓ Stainless steel rolling facilities
✓ Manufacturing of Drilling equipment, Cargo equipment for rigs. Specialist down-hole tools, processing equipment, sub-sea oilfield equipment.
✓ Steel service and packaging centre
✓ Large bore steel pipe
✓ Small bore steel tube
✓ Automotive steel pressings
✓ Steel doors, frames shelving and racking
✓ Galvanised sheet products
✓ Colour coated cold rolled steel
✓ Exhaust systems
✓ Automotive components ductile iron castings
✓ Stainless steel

Mineral Production and Manufacturing

a) Status Quo of the Mining Sector

A variety of industries within the mining and quarrying sector are active throughout the region to beyond Vredendal. Mining and quarrying themselves are not important income generators in the Saldanha Municipal area, however, the processing of the minerals play an important role in the West Coast economy. Namakwa Sands (Exxaro) and Saldanha Steel (Arcelor Mittal) plants process minerals mined outside the region, whilst some cement is produced at De Hoek and Riebeek-West. Salt is also produced from the sea water at Velddrif.

The mining sector is the smallest sector within the Saldanha Bay Municipal area and contributed only 0.3% to the regional economy in 2007. This sector only provides work to 1% of the working population in the Saldanha Bay Municipal area. It is, however, considered to be important due to the linkages that exist between this sector and the manufacturing sector.
A small number of companies currently dominate the output and employment of mining activities in the West Coast. Namakwa Sands in Saldanha Bay, for example, employs 62% of the total number of people employed in the mining sector on the West Coast Region. This situation causes the mining sector to be vulnerable to the closure or downscaling of these concerns. The Mining sector consists of a number of large well established companies (e.g. TransHex, Namakwa Sands etc.) and a larger number of small, often unsustainable and short-lived, prospecting companies largely involved in prospecting for diamonds. The main mining activities in the Region are as follows:

- South: Sand Mining by PPC cement and a number of quarries
- North / Matzikama: Sand Mining by Namakwa Sands
- Coastal areas: diamond mining both on- and off-shore

The mining sector in the West Coast does not currently have strong linkages with other economic sectors in the region. Due to long distances and high volume cargo, the transporting of mineral products from the West Coast is relatively expensive. The larger mining companies on the West Coast have developed contracts with Spoor.net; in which special freight trains link the mines and quarries with the major towns (e.g. Namakwa Sands have a service between Klawer, Koekenaap and Bitterfontein).

The core operations in Saldanha focuses on the rail transportation of export iron ore. The Saldanha / Sishen rail link, which is between the Sishen iron ore deposit and the Saldanha harbour, are used for these purposes. Other linkages between the mining and transport sectors are found in Saldanha, where the harbour is used as a bulk freight harbour. In addition, slag and coal, processed at the material handling factory in Saldanha is transported to the PPC factories at Riebeek-Wes and De Hoek (West Coast Development Strategy, 2000).

The Mining sector can be a powerful force in economic development within the Saldanha Bay Municipal area. Beneficiation of minerals should take place rather than exporting raw materials. This can create jobs directly and indirectly as well as opportunities for growth for lateral or downstream opportunities / businesses.

**b) Identified Downstream Opportunities within the Mining Sector**

The following downstream opportunities were identified through previous studies and documentations completed and are as follows:

- The beneficiation and processing of minerals (zircon, limestone, rutile, titanium, pig iron, phosphate, glass sand and kaolin) – various downstream opportunities.
- Titanium smelters – investors already interested in the Saldanha Bay area.
- The beneficiation of raw materials, turn into finished product which could be exported or sold locally (minerals, tiles, iron-ore) – could also lead to SMME development.
- Oil and Gas opportunities / refinery / Gas fired power station (availability of oil storage facility at Saldanha Bay)

Various interviews were held with key stakeholders within this sector such as Namakwa Sands (Exxaro) and the Saldanha Bay Municipality regarding possible downstream opportunities for this sector. The following opportunities were identified:
✓ Pig iron Foundry
✓ Titanium Pigment
✓ Titanium Metal Production
✓ Welding Electro Plants
✓ Iron Foundry - a Cast Iron Pipe Plant
✓ Zircon Grinding Facilities
✓ Zirconium Metal
✓ Gas into Electricity

**Mining related opportunities and potential projects identified by Wesgro and the Saldanha Bay Municipality** a few years ago - that could still be feasible in future:

✓ High grade phosphate – the potential product will be phosphate rock and the potential market will be the fertiliser industry.
✓ Limestone – the potential product will be cement feedstock, clinker, filler and agricultural lime.
✓ Titanium metal
✓ Titanium dioxide pigment
✓ Hot briquetted iron (HBI)
✓ Zircon based refractories – refractory plant

**Proposed Industrial Development Zone Site Assessment:**

**Table 3** indicates the industrial / warehousing location assessment of the proposed Industrial Development Zone within the Saldanha Bay Municipal area.

**Table 3: Industrial / Warehousing Location Assessment**

<table>
<thead>
<tr>
<th>Location Factors</th>
<th>Grade 1-10</th>
<th>Weight 1-5</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro location</td>
<td>8</td>
<td>5</td>
<td>40</td>
</tr>
<tr>
<td>Accessibility</td>
<td>8</td>
<td>4</td>
<td>32</td>
</tr>
<tr>
<td>Exposure &amp; sight value</td>
<td>8</td>
<td>5</td>
<td>40</td>
</tr>
<tr>
<td>Suitably differentiated residential markets</td>
<td>7</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>Image as successful industrial precinct</td>
<td>6</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>Boss theory</td>
<td>6</td>
<td>5</td>
<td>30</td>
</tr>
<tr>
<td>Linkages / agglomeration</td>
<td>8</td>
<td>5</td>
<td>40</td>
</tr>
<tr>
<td>Workforce</td>
<td>8</td>
<td>4</td>
<td>32</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>7</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>Future Development Trends</td>
<td>7</td>
<td>5</td>
<td>35</td>
</tr>
<tr>
<td>Proximity to retail &amp; services</td>
<td>7</td>
<td>5</td>
<td>35</td>
</tr>
<tr>
<td>Sufficient parking &amp; access for heavy vehicles</td>
<td>7</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>Good security</td>
<td>6</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>Performance of existing node</td>
<td>7</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td><strong>Total points</strong></td>
<td><strong>444</strong></td>
<td><strong>Score 71.6%</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: Demacon, 2009

*Note:* 80%+ indicates an exceptional site rating; a site rating of 70 – 80% is high and indicates that most important fundamentals for successful industrial development are in place; a rating of 60 – 70% indicates some critical factors may be lacking but could possibly be addressed; projects with a sub 60% rating are not recommended for consideration.
The proposed Saldanha Industrial Development Zone rated high (71.6%) as a potential industrial locality / possible IDZ.

**Industrial Net space Demand Modelling:**

Subsequent demand modelling indicators provide insight to the performance of current and future demand of the industrial market of the Saldanha Bay Municipal area.

✓ **Synthesis of industrial space demand modelling – Saldanha Bay Municipal Area**

**Table 4: Synthesis of Space Demand Modelling Results (ha)**

<table>
<thead>
<tr>
<th>Cumulative Additional Land Demand</th>
<th>Up to 2014</th>
<th>2014-2019</th>
<th>2019-2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>34.86</td>
<td>55.93</td>
<td>70.51</td>
</tr>
<tr>
<td>Warehousing</td>
<td>52.29</td>
<td>86.88</td>
<td>112.05</td>
</tr>
<tr>
<td>Total - Saldanha Bay Municipal Area</td>
<td>87.15</td>
<td>142.81</td>
<td>182.56</td>
</tr>
<tr>
<td>Minimum Share (50%)</td>
<td>21.79</td>
<td>35.70</td>
<td>45.64</td>
</tr>
<tr>
<td>Maximum Share (60%)</td>
<td>30.50</td>
<td>49.98</td>
<td>63.90</td>
</tr>
<tr>
<td><strong>Total hectares</strong></td>
<td>26.15</td>
<td>42.84</td>
<td>54.77</td>
</tr>
</tbody>
</table>

Source: Demacon, 2009

**Table 5: Recommended Sizes**

<table>
<thead>
<tr>
<th>Recommended Sizes</th>
<th>Rand per annum / m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of development (sqm) (up to 2024)</td>
<td>214 209.4m² (214ha)</td>
</tr>
<tr>
<td>Capital investment (2009 constant values)</td>
<td>R964 million</td>
</tr>
<tr>
<td>Employment opportunities</td>
<td>3 895</td>
</tr>
<tr>
<td>Parking</td>
<td>4 284</td>
</tr>
<tr>
<td>Parking infrastructure &amp; landscaping cost (2009 constant values)</td>
<td>R396 million</td>
</tr>
<tr>
<td>OPME</td>
<td>2010 / 2011</td>
</tr>
</tbody>
</table>

Source: Demacon, 2009

✓ **Synthesis of industrial space demand modelling – Saldanha Bay Municipal Area with an IDZ Catalytical Effect**

**Table 6: Synthesis of Space Demand Modelling Results (ha)**

<table>
<thead>
<tr>
<th>Cumulative Additional Land Demand</th>
<th>Up to 2014</th>
<th>2014-2019</th>
<th>2019-2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>68.68</td>
<td>149.15</td>
<td>217.34</td>
</tr>
<tr>
<td>Warehousing</td>
<td>104.46</td>
<td>236.99</td>
<td>354.75</td>
</tr>
<tr>
<td>Total - Saldanha Bay Municipal Area*</td>
<td>173.14</td>
<td>386.14</td>
<td>572.10</td>
</tr>
<tr>
<td>Minimum Share (50%)</td>
<td>43.29</td>
<td>96.53</td>
<td>143.02</td>
</tr>
<tr>
<td>Maximum Share (60%)</td>
<td>60.60</td>
<td>135.15</td>
<td>200.23</td>
</tr>
<tr>
<td><strong>Total hectares</strong></td>
<td>51.94</td>
<td>115.84</td>
<td>171.63</td>
</tr>
</tbody>
</table>

Source: Demacon, 2009

* Note: The model forecasts space demand and assumes, for technical purposes, a 100% occupancy rate. Private sector ventures typically include an additional 20 - 30% buffer value, which affords flexibility to absorb future growth. Public sector ventures are informed and guided by slightly different rules / dynamics and, given the extent of the capital outlay, consciously choose to exceed the buffer value by 100- 300%, i.e. service 100 - 300% more land than what would actually be taken up by the market over the short to medium term (i.e. the first 3 - 5 years). The scale economies afforded to a large public sector turn-key investment are very different from a pure profit-driven private sector development. Hence, public sector finance models are arguably less sensitive to huge capital outlays to finance bulk infrastructure and related services.
Space demand calculations reflect positive growth within the industrial sector. The above figures reflect aggregate market growth capacity within the market area and it is evident that the current situation reflects a favourable outlook for industrial developments over the medium to long term.

Given the rate of market growth, in terms of the Saldanha area with an IDZ Catalytical effect, it is anticipated that an industrial component of approximately 572 ha could be supported within the proposed node between 2014 and 2024. It will require a capital investment of approximately R2.6 billion and will create approximately 7723 employment opportunities.

**Concluding Remarks & Recommendations**

In order to unlock the economic development potential of the main towns of the Saldanha Bay Municipality (Vredenburg and Saldanha), the towns must become integrated and the link between Saldanha and Vredenburg must be continuous. This vision can be realised through the promotion, encouragement and development of an industrial development zone between Vredenburg and Saldanha. This IDZ development would not only create opportunities for employment, but also create the preconditions for the optimal performance of these urban areas. For example – distances would be shortened, resulting in the optimal utilisation of the services and transportation infrastructure between the towns.

The largely vacant and underutilised land between Saldanha and Vredenburg has well-developed road and rail infrastructure (pre-requisites for industrial development). Moreover, the land is well-located relative to the sea and holds the potential for rail transportation of goods. Due to a number of factors the Back of Port area has the potential to attract existing firms who would want to relocate to well-located and accessible locations. The Back of Port area therefore has the potential to attract new and existing firms as the opportunity exists to optimise the location of the area relative to the sea and rail transport opportunities. It is therefore logical that industrial development be encouraged in this area.

While the location of specific industries will be determined by market forces, it is important that higher impact industrial activities be located further away from residential areas. Harbour-related industrial activity should also be encouraged within the industrial development zone. The upgrading of roads is necessary to ensure that they have sufficient capacity to accommodate additional traffic. Roads will have to be planned and constructed within the area to cater for future growth (Urban Dynamics, 2008).
6 SECTION SIX: PHYSICAL ENVIRONMENT ASSESSMENT

This section of the report focuses on the Spatial and Infrastructural Analysis of the Saldanha Bay Municipal area especially in terms of the proposed Industrial Development Zone.

Note: This section was undertaken as a preliminary assessment in terms of the abovementioned steps for the whole study area. The assessment was done at a pre-feasibility level and various assumptions were made during the assessment, due to the level of information available at that stage. Additional information was received at a later stage from the Saldanha Bay Municipality which provided their perspective on the bulk infrastructure capacity and requirements in the municipal area. It was based on the five cluster developments as proposed by the Saldanha Bay Municipality. This section will thus be divided into two scenarios with different cost implications for the Saldanha Bay Municipality.

Regional Context
The West Coast District Municipality is situated along the west coast of the Western Cape Province and includes five local municipalities, namely Matzikama, Cederberg, Bergriver, Saldanha Bay and Swartland, as well as the District Management Area. The dominant land uses within the District are agriculture and vast areas of natural vegetation. Expansive conservation areas such as the West Coast National Park and the Cederberg Wilderness Area are also found. Urban activities are concentrated at Saldanha-Vredenburg, along the coast.

Transport plays a crucial role in the social and economic development of the region, yet the majority of public transport services are concentrated in the large towns. The port of Saldanha is multi-functional and acts as a naval, commercial, and fishing port, with its most prominent function being the export of iron ore transported via the Sishen-Saldanha railway line (Orex rail line) which terminates at the port.

Local Context
The Spatial Management Concept of the draft Saldanha Bay Spatial Development Framework (2009) proposes residential infill development between the towns of Vredenburg and Saldanha along route R399, with the long term objective being to link the two towns to one another. The residential development will be accompanied by service industries, business and professional office uses respectively.

To the east of this residential area is the proposed industrial development zone. It extends from the Port area in the south up to route R45 in the north, and includes land both to the east and west of the Sishen-Saldanha railway line which runs through the central part of the area in a north-south direction. The Cape Town-Saldanha railway line runs through the northern part of the industrial development zone in an east-west direction.

The industrial development zone is generally divided into two broad precincts: the “Port” area, and the “Back of Port” area. The Port itself falls under the jurisdiction of the National Ports Authority, which takes responsibility for planning and management. Major provision has been made for the expansion of the port and in this regard, an extensive draft Port Development Framework has been prepared.
As an economic spin-off from the proposed upgrading and expansion at the Saldanha Bay Port, major industrial development is envisaged to occur within the ‘Back of Port’ area (the Saldanha Bay Municipality propose an industrial development initiative that makes provision for five economic development “clusters” namely Renewable Energy Production and Manufacturing, Dry Dock – Oil and Gas, Maritime – Ship Building and Repair, Steel Production and Manufacturing and Minerals Production and Manufacturing).

The Spatial Development Concept anticipates that the ‘Back of Port’ industrial expansion will be a turnkey project driving the growth of a major industrial development zone which, in the long term, is envisaged to link the eastern part of Saldanha with the Port and the Port with the south-eastern section of Vredenburg. It is anticipated that this industrial development zone will grow from the Port and that it will be located on both sides of the railway line. Saldanha Bay Municipality is considering a first phase of the proposed IDZ (namely the Renewable Energy cluster) to be developed on a 350 ha piece of land in the Northern back of Port region.

The availability of sufficient service infrastructure can be a major obstacle in realising the development potential of the ‘Back of Port’ industrial development area. According to the Saldanha Bay Municipality, they anticipate that the existing bulk infrastructure capacity is sufficient to accommodate the first phase Renewable Energy cluster (as proposed by Saldanha Bay Municipality). Service infrastructure is regarded as a key investment which is of utmost importance as the availability and provision thereof can be the mechanism to unlock the development potential of the ‘Back of Port’ area. The availability and provision of bulk service infrastructure is regarded by the Saldanha Bay Municipality as a mechanism to unlock the first phase Renewable Energy cluster.

**Possible Constraints**

The success of the proposed industrial development will to a great extent be subject to the ability to procure land for development purposes. The first step in the development process should therefore be to secure the applicable land portions and it is proposed to develop a clear land acquisition strategy (including land valuation).

To this effect the Saldanha Bay Municipality indicated that a Memorandum of Understanding (MOU) was recently signed between the Saldanha Bay Municipality and the private landowner (Parkland - 285 hectare) to secure land for the Phase-I development (Renewable Energy Cluster as proposed by Saldanha Bay Municipality) of the proposed IDZ. A second MOU was also signed with the owner of farm Langeberg (601 hectares) for phase II of the proposed IDZ.

It is proposed that the entity (development agency) tasked with the development and implementation of the industrial development, develop a clear land acquisition strategy and secure the necessary funding to acquire the land (if applicable). The Saldanha Bay Municipality is currently busy establishing a business model, including company structures for the entity (development agency) to be tasked with the development and implementation of the industrial development zone.

Assuming all private owned land will be purchased, the capital required can vary between R500 million to R2 billion (order of magnitude estimate). This is based on an assumed average land cost ranging between R200 000/ha to R600 000/ha (assumed costs without a
property valuation having been done). One of the first steps should be to determine the market value of the properties (market value to be deemed the average of two independent valuations).

The Saldanha Bay Municipality however indicated that they will take current land prices, which is assumed being between R10 000/ha to R200 000/ha (assumed costs based on current land prices in area of development and without a property valuation having been done), into consideration when private owners investment share in the holding company is determined and or negotiated.

**SCENARIO 1: Infrastructure: Extent of the Development**

The scope of this investigation is to determine what the cost implication would be to water and sewer services in order to serve the possible new industrial development. The investigation was conducted within the scope of the Water Master Plan (WMP) and Sewer Master Plan (SMP) of the West Coast District Municipality, conducted by GLS Consulting in July 2006.

The study area is situated between Saldanha Bay and Vredenburg. The area consists of an estimated gross area of approximately 3 310 ha. No indication towards the proposed land use composition is available at this stage, and following previous proposals within the study area, the following assumptions were made:

- General Industrial – 50% of the gross area
- Mixed use (including light industrial and business) – 20% of gross area.
- Open Spaces (including roads and parks) – 30% gross area

The study area was not previously part of the potential future development areas used in the WMP and SWP. This will therefore be treated as an addition to the water demands estimated at the time of the master plan studies.

**Water Demand**

The estimated future water demand for the fully developed industrial area is ±38 400 kl/d. This water demand would be considered as an addition to the future water demand estimated in the WMP.

**Bulk Water Resources**

Currently, the WCDM has a total allocation of 23 140 000 kl/year (or 63 397 kl/d) from DWAF. This water is abstracted at three different locations, namely Misverstand (Berg River), Swartland (Voëlvdam pumphouse) and SOWG (Langebaan Road aquifer). This shows that the current sources are insufficient and other alternatives are needed. The WCDM recently commissioned a study to investigate alternative water sources for the West Coast district (including Saldanha Bay). The study is amongst others investigating the following alternative water sources:

- Basin transfer from the Breede River
- Artificial recharge of ground water aquifers
- Water demand management
- Desalination
The study is scheduled for completion by mid 2009. The results of the study will be essential for the future bulk water supply of the proposed industrial development. For purposes of this pre-feasibility study and order of magnitude cost estimate it is assumed that an increased allocation will be available and that the existing bulk water systems will be upgraded.

**Reservoir Storage**
According to the WMP, additional water storage at Besaansklip reservoir is required for the future scenario at Saldanha Bay Municipality. Therefore any additional water demands would increase this capacity shortage proportionally.

**Order of Magnitude Cost Estimate – Water Supply**
Below is an order of magnitude cost estimate of the required bulk water infrastructure for the proposed industrial development. It should be noted that the intention of the cost estimate is to provide an order of magnitude indication of the cost involved for this service. Because there was limited information available at the time of compiling this report the cost estimate is based on various assumptions. More detailed work is required to increase the accuracy of the estimates provided below.

The cost of water services are estimated at a total of R602 million (order of magnitude) which is required to provide the required water infrastructure for the proposed industrial development.

The WCDM has a policy for the provision of bulk services where it is stipulated what the bulk service contribution is that developers are required to pay for the provision of bulk services. A pro-rata rate contribution of 31% of the cost of water treatment and bulk supply line was assigned to the industrial development. The total bulk service to be provided by WCDM is estimated at approximately R370 million. According to the WCDM policy, the developer has to contribute R5 250/kl/d as a once off capital contribution to bulk services. This equates to a contribution of R202 mil which is only 55% of what is required.

**Waste Water**
The Saldanha Bay Municipality is currently the waste water supply authority.

**Order of Magnitude Cost Estimate – Waste Water**
Below is an order of magnitude cost estimate of the required waste water infrastructure for the proposed industrial development. It should be noted that the intention of the cost estimate is to provide an order of magnitude indication of the cost involved for this service. Because there is no approved layout and conceptual planning available, the cost estimate is based on a number of assumptions. More detailed work is required to increase the accuracy of the estimates provided below. The total estimated waste water infrastructure cost is R250 million.

**Transport**
The transport infrastructure network is generally well planned and developed in the Saldanha / Vredenburg area. There is however a number of constraints that will have to be addressed to accommodate large scale industrial development in the area as described below.
**Roads**

The main arterial roads which are of strategic importance and that will serve the proposed industrial development includes the R27 (the West Coast) and the R45 between Vredenburg and Hopefield. The R27 provides access from the south towards Milnerton and Cape Town. The R45 provides access in an east-west direction and eventually connects with the N7. Main Road 238 is one of the most prominent roads in terms of usage frequency, and connects Vredenburg with Saldanha.

Secondary roads of importance includes Minor Road 559 linking Langebaan with Saldanha and Road T79 linking the R27 with Main Road 238. The T79 runs in an east-west direction through the proposed industrial development.

The authorities in the area include the WC Department of Transport and Public Works and the Saldanha Bay LM (secondary road network).

There is a need for proper planning of future road infrastructure as there is currently no roads master plan available for the area. The Western Cape Department of Transport and Public Work’s Roads Department is starting to look at the development of a strategic transport plan (at a regional level) for the area. It is essential for such planning to be aligned with the Port and potential industrial development requirements.

**Rail**

The Saldanha area is well serviced with rail infrastructure and upgrading of capacity can be provided with relative ease.

**Air**

There is a small, relatively undeveloped landing strip west of the proposed development between Vredenburg and Saldanha. Proposals have been made to upgrade the airport and incorporate it into the envisaged corridor along Main Road 238 between Saldanha and Vredenburg.

**Electricity Supply:**

**Bulk Supply**

The northern Back of Port (3 194ha) and southern Back of Port (1 588ha) areas fall within two areas of supply, with Saldanha Bay Municipality and Eskom being the supply authorities respectively. The railway line, that transverses through the sites, is the official boundary between the two aforementioned areas of supply. All the developments on the western side of the railway line are in the authority domain of Saldanha Municipality and those on the eastern side in Eskom’s area of supply.

An application, as well as the details surrounding the bulk electrical supply point for the two developments, will have to be forwarded to – and negotiated with both the Municipality and Eskom respectively. It is strongly recommended that the applications be lodged with the two supply authorities as soon as possible, should the developments proceed, preferably once the approval for the rezoning and subdivision has been obtained.

The combined estimated load for both areas is ±200 MVA, with the individual estimated loads of the northern Back of Port and southern Back of Port areas being ±120MVA and ±80MVA respectively.
Eskom Area of Supply

Eskom has recommended that the proposed development be supplied with 132kV (kilovolt) from their Blouwater substation, which at present has a voltage level of 132kV/66kV, by way of 3x80MVA transformers. Currently, the aforementioned substation is being fed from the Aurora 400kV/132kV, 4x250MVA transformer substation via 3x132kV lines with a thermal capacity of ±460MVA.

At present, the loading on the aforementioned feeder lines are ±180MVA. With contingencies taken into account, the current available spare capacity for the development is ±50MVA. Therefore, appropriate strengthening on the aforesaid network will have to be provided in order to provide the 150MVA difference.

Eskom has indicated that in order to achieve the appropriate strengthening of the network, the following two options must be considered:

1. Another 132kV line must be constructed from the Aurora substation to the Blouwater substation. The development will then in turn be fed from the Blouwater substation’s 132kV bus;
2. Or extend the existing 400kV network from the Aurora substation to the Blouwater substation. The development will still be supplied from the Blouwater substation’s 132kV bus.

Eskom recommends the second option as the best solution and has also indicated that the lead time for such a strengthening project is ±4 years (2013/2014).

Saldanha Municipality Area of Supply

Saldanha’s existing 66kV and 11kV electrical infrastructure in the vicinity of the proposed development lacks sufficient capacity to accommodate the estimated loads, for both the northern and southern Back of Port areas applicable to their authority domain.

In order for Saldanha to maintain their firm supply and reside within their reserve margins, the following proposal has been made in order for the provision of the required supply:

1. A new 132kV/66KV substation must be provided at a strategic position, in order to cater for the applicable areas to be supplied, for the interim and future;
2. The notified maximum demand for the town will need to be increased;
3. Applications for new metering points will need to be submitted to Eskom in both the Municipality and Eskom’s areas of supply;
4. Land must be made available for both the proposed 132kV/66KV substation and 66kV overhead line infrastructure.

Order of Magnitude Cost Estimate – Electricity

The bulk electricity supply infrastructure will amount to approximately R200 million. The internal reticulation cost for the northern Back of Port area is estimated at around R400 million.

The Saldanha Bay Municipality recently stated that a possible 450MW hybrid power plant could be built that does not need any substantial water and electricity demands for the IDZ.
The investment is a US$2 billion dollar or R16 billion investment, with an offset of R3 billion. The investment will be financed by European Banks and the Bank of Japan with respective interest rates of 3.5% and 1.2%. The lifetime is 25 years and the ROI 6-8 years based upon Nersa Refit tariffs and tariff proposals. This will also have a significant impact on the electricity and water usage within the proposed IDZ and should be taken into account in further future analysis.

**SCENARIO 2: INFRASTRUCTURE – SALDANHA BAY MUNICIPALITY PERSPECTIVE**

The information below was received from Saldanha Bay Municipality and provides their perspective on the bulk infrastructure capacity and requirements in the municipal area. It is based on the five cluster development as proposed by Saldanha Bay Municipality. The section should be read in conjunction with sections above.

**Extent of the Development**
Saldanha Bay’s assessment was conducted within the knowledge of the latest actual water demand figures supplied by the Saldanha Bay Municipality. The proposed five clusters of development planned for this region has also been taken into consideration. Saldanha Bay Municipality based their assessment on the following assumptions:

- Industrial (Maritime & Dry-doc) – 10% of the gross area
- Industrial (Steel & Minerals) – 20% of gross area
- Mixed use (Renewable energy, including light industrial and business) – 30% of gross area.
- Open Spaces (including roads and parks) – 40% gross area

**Water Demand**
The estimated future water demand for the fully developed industrial area based upon the five proposed clusters (namely renewable energy, value added on current steel & minerals, dry-doc and maritime) as determined by Saldanha Bay Municipality is ±4 500 kl/d

Recently (2009) an ROD has been issued for the erection of a sea water desalination plant with a maximum capacity of 3 600 kl/day to provide for the water demand requirements of future Port expansion projects. The additional water demand for the dry-doc and maritime clusters should be supplied from this source and should be excluded from the Withoogte Bulk Infrastructure capacity.

The water demand estimation (2 000kl/day) for Steel and Mineral Cluster has made provision for the equivalent of three value added steel processing units, similar to a unit that could process approximately 50% (or 600 000 ton per year) of the current steel manufacturing capacity of the region (Saldanha Steel = 1.2 million tons per year).

**Bulk Water Resources**
Currently, the WCDM has a total allocation of 23 140 000 kl/year or 63 397 kl/day from DWAF. This water is abstracted at three different locations, namely Misverstand (Berg River), Swartland (Voëlvlei dam) and SOWG (Langebraan Road aquifer). The municipal forecast shows that the current sources are sufficient, but other alternatives (etc. desalination) are needed for Port Developments, especially the dust suppression initiative in the Port for the planned Iron Ore expansion project. The WCDM recently commissioned a
study to investigate alternative water sources for the West Coast district (including Saldanha Bay). The study is amongst others investigating the following alternative water sources:

- Basin transfer from the Breede River
- Artificial recharge of ground water aquifers
- Water demand management
- Desalination

The study is scheduled for completion by mid 2009. The results of the study will be essential for the future bulk water supply of the future growth requirements of the region; the proposed industrial development will have a limited or small impact on the total water demand of the region. The water demand of the proposed IDZ will be approximately 5% of the region’s total water demand.

A number of other studies (including DWAF’s reconciliation study and Saldanha’ re-use of treated effluent studies) are also underway and should be included in any future studies for the proposed industrial development.

**Reservoir Storage**

According to the SBM projections, limited additional water storage (30 Ml) at Besaansklip reservoir is required for the future scenario at Saldanha Bay Municipality, inclusive of the industrial development proposed. For the purpose of this report, the criteria suggested by the WMP were used to evaluate the additional water storage requirement, namely 48 hrs (2 X AADD). Therefore, an additional 30 Ml storage is required at Besaansklip, distributed over the next 15 years (2025).

**Order of Magnitude Cost Estimate – Water Supply**

If the proposed five cluster industrial development scenario is followed the cost estimate for bulk water infrastructure would fall within the current proposed budgets of the SBM and WCDM for phase I of the planned IDZ (2015). It is therefore estimated that no additional cost will be needed to implement Phase I (Renewable Energy) of the IDZ; the current bulk water infrastructure of the region will be able to accommodate the next five year’s industrial development. These proposed developments will focus on solar assembly, biomass generation units and wind energy based production facilities – these types of industries do not utilize or are dependent on high water demands.

Cost estimates for the implementation of phase I (renewable energy): The phase I development of the IDZ, e.g. Renewable Energy Assembly Plants, would put no additional stress on the current Bulk Water Supply Infrastructure and could be serviced with the current infrastructure capacity

Cost estimates for the implementation of phase II of the five cluster IDZ development together with projected regional growth would be limited to: Cost of storage capacity for 48 hours at Besaansklip Reservoir – storage needs to be increased from current 70Ml to 96 Ml.

**Existing Waste Water Infrastructure**

Langebaan, Saldanha and Vredenburg all have their own separate waste water treatment works ("WWTW"). The situation at each of them is as follows:
**Langebaan** WWTW is situated east of the town. The sewer system consists of a large amount of sewer pumps that serve all the low lying areas, with a large pump station at Freeport that pumps all the sewerage to the Langebaan WWTW. Currently (Aug 2009) the WWTW has a capacity of 2 832 m$^3$ per day, the latest utilization, based on the last 12 months average flow recordings, are 1 668 m$^3$ per day. **The Langebaan WWTW has spare treatment capacity of 1 164 m$^3$ per day.**

Regarding the industrial development, the Langebaan WWTW seems to be inaccessible to utilize, and therefore would not be practical to consider for the industrial development planning.

**Saldanha** WWTW is situated north-east of the town. The sewer system also consists of various sewer pumps, pumping sewerage to the higher sewer works from where it is able to gravitate to the WWTW. Saldanha WWTW has a current capacity of 5 000 kl/d. The average daily flow, based on the last 12 months flow figures, is 2 457 m$^3$ per day. This WWTW has current spare capacity of 2 543 m$^3$ per day, which would be more than adequate for the proposed domestic and industrial effluent originating from the industrial activities, based on the five cluster scenario, planned for the south western parts of the proposed industrial development (e.g. IDC Industrial park surroundings and the activities planned in the Port).

**Vredenburg** WWTW is situated west of Vredenburg. The sewer system consists of two pump stations, but mainly gravitates to the WWTW. The WWTW has a current capacity of 5 000 kl/d. The average daily flow, based on the last 12 months flow figures, is 3 970 m$^3$ per day. This WWTW has current spare capacity of 1 030 m$^3$ per day, which would be more than adequate for the proposed domestic and industrial effluent originating from the industrial activities planned for the Phase-I IDZ development (Parklands development), which will accommodate the renewable energy cluster (solar assemble plants and wind energy production units).

According to the SMP, the capacity has to increase to 7 000 kl/d to accommodate the future scenario of a fully developed urban edge. According to Saldanha Bay Municipality it is not anticipated that the urban edge will be fully developed within the next 15 years (2025). The increased capacity needed for such a scenario, as projected in the SMP, needs to be planned and budgeted for as a long term natural town growth scenario.

Effluent originating from industrial development planned for the north eastern parts of the proposed industrial development (e.g. Parklands – Renewable Energy) will be pumped to and treated at the Vredenburg WWTW. Current planning of Phase-I IDZ, includes onsite treatment and usage of “grey water”, which will reduce sewage flows from the planned IDZ - industrial area to the WWTW to a minimum (exact flows to be determined). **It is therefore anticipated that the current spare capacity at this WWTW is adequate to handle the estimated sewage flows from the proposed industrial development planned for renewable energy cluster.** No additional sewage treatment capacity needs to be created to treat effluent from the proposed industrial development area, should the area be developed within the identified five (“water friendly”) clusters. The current spare capacity at the Saldanha and Vredenburg WWTWs facilities will be able to accommodate the proposed industrial development.
Order of Magnitude Cost Estimate – Waste Water
According to Saldanha Bay Municipality it is estimated that no additional cost is required for upgrading Bulk Waste Water Treatment Facilities in the Saldanha Municipal area. Current spare capacity of WWTW at Saldanha and Vredenburg WWTW is adequate to handle effluent from the proposed industrial development, should the five cluster development be implemented.

Infrastructure Development
As mentioned above, the ability of the respective supply authorities to provide the required bulk infrastructure is critical for the success of the proposed industrial development. According to the Saldanha Bay Municipality the nature and size of the proposed development (five clusters) will not require an initial significant capital investment for bulk infrastructure. As indicated above the current Bulk Infrastructure can accommodate the proposed Renewable Energy Industrial Cluster, Phase-1 of the IDZ development.

Although no severe constraints against the development of the project, there are a number of funding sources and options available to contribute towards the financing of the required future infrastructure. It is proposed that not only the public sector but also the private sector is involved in the development and financing of the bulk infrastructure. The public sector will however be required to provide the initial risk capital to initiate the development and provision of infrastructure before the private sector will become involved. This will result in effective gearing of public sector funds.

Environmental Issues and analysis

Ecosystem Status – Land Based
The ecosystem status of remnant natural vegetation layer was derived from the CAPE Fine-Scale Biodiversity Planning Project. This ecosystem status of remnant natural vegetation layer shows which ecosystems in the Saldanha Bay Municipal area are most threatened, based essentially on how much natural habitat has been lost from these ecosystems. The ecosystem status layer includes:

- Critically endangered ecosystems;
- Endangered ecosystems;
- Vulnerable terrestrial ecosystems;
- Least threatened ecosystems.

It is evident that the bulk of the study area is classified as a Vulnerable Terrestrial Ecosystem. The SDF furthermore states that “In vulnerable ecosystems, loss of natural habitat should be carefully weighed up. The rate of habitat loss in these ecosystems should be monitored, and the cumulative impacts of different projects or developments that result in loss of natural habitat should be borne in mind. It is important to consult ecological process layers and special habitat layers where these are available. Every attempt should be made to avoid loss or disturbance of special biodiversity features”.

Ecosystem Status – Marine Based (Langebaan Lagoon and Saldanha Bay system)
For the requirements of the Saldanha Bay and Langebaan Lagoon State of the Bay monitoring programme a ranking system has been devised (Natural, Good, Fair and Poor) that incorporates both the drivers of changes and a range of different measures of ecosystem health from contaminant concentration in sea water to change in species
composition of a range of organisms. Collectively these parameters provide a comprehensive picture of the State of the Bay and also a baseline against which future environmental change can be measured.

Various physical, chemical and biological factors influence the overall health of the environment. Environmental parameters or indices were selected that can be used to represent the broader health of the environment and are feasible to measure, both temporally and spatially. The following tables give a summary of the environmental parameters reported on in the State of the Bay: Saldanha Bay and Langebaan Lagoon:

The State of the Bay Report indicates that the marine ecosystem in the Saldanha Bay and Langebaan Lagoon is in general moderately impacted upon by human intervention and development. Any proposed future industrial activities need to be developed in such a way that no further degradation of the marine ecosystem should occur or at least degradation should be minimized by the type of development allowed in the Bay.

**Critical Biodiversity Areas**

The Critical Biodiversity Areas (CBAs) layer was derived from the CAPE Fine-Scale Biodiversity Planning Project. CBAs are areas of natural features on land and/or containing water (e.g. patches or remnants of indigenous vegetation, wetlands, rare species habitat) which are critical for conserving biodiversity and maintaining ecosystem functioning. These CBAs should thus be kept in, or restored to, their natural state.

According to the environmental report as contained in the draft Saldanha Bay SDF the biodiversity targets would be met if all the Critical Biodiversity Areas in the Saldanha Bay Municipal area were maintained in a natural state. It is evident that there is a “Critical Biodiversity Corridor” running through the study area from Besaansklip in the north-west to the coastline in Saldanha Bay to the south, and through the central part of the proposed industrial development zone.

**Industry Policy – Key Environmental Issues**

- There is a conflict in interest between industrial development and the conservation of the pristine natural environment in the municipal area;
- Any adverse environmental impacts of heavy industrial areas must be adequately mitigated, with the most important issues being:
  - the capacity of bulk water for industrial development. Heavy industries currently abstract water from an underground aquifer – the capacity of bulk water for industrial development is unknown;
  - ways and means to prevent the pollution of underground water resources from the industries;
  - the limited airspace available in terms of emissions from industries in the study area;
  - The ability of the resident and migrant bird populations (endangered and under stress) of the Bay to handle new industrial developments and other anthropogenic pressures;
  - The limited capacity of the marine environment to handle marine based industrial and other anthropogenic development;
Ways and means to limit and prevent future sediment movement and mitigate current beach erosion stresses in the Marine Environment;

Ways and means to prevent the further pollution of the marine environment and implementation of mitigation measures to relief current pollution stress on various environmental parameters as per State of the Bay Report.

**Development Perspective: Opportunities and Constraints**

Following from the Physical Environmental Analysis a composite Development Perspective was compiled. It can be summarised as follows:

- From the environmental information available it is evident that there is a vulnerable ecosystem present in the study area which extends from the Besaanskip area in the north-western part of the study area southwards towards the coastline and then towards the West Coast National Park and the RAMSAR site at the Langebaan Lagoon.
- The continuity of this system should be ensured and no transformation of this area should be allowed.
- From the 2008 State of the Bay Report it is evident that there is also a vulnerable marine ecosystem present in the study area which includes Small Bay, Big Bay and Langebaan Lagoon, which is a declared RAMSAR site.
- The protection of this marine ecosystem need to be ensured and no further degradation of this marine ecosystem should be allowed or at least minimized by the type of development allowed in the Bay.
- It is furthermore proposed that an Environmental Management Framework (EMF) be compiled for the entire study area which should define the development guidelines for the industrial development zone in terms of, amongst others, the following aspects:
  - volume and nature of air emissions (including heat and noise) to be allowed based on the “air space” available in the area;
  - volume, nature and concentrations of pollutants (effluent, dust and other) to be allowed in and around the marine environment based on the assimilative capacity of the Bay system;
  - guidelines with regard to size and location of new anthropogenic structures planned for and in the marine ecosystem;
  - guidelines with regard to industrial water effluent storage and discharge;
  - water sources to be utilised for industrial purposes;
  - spectrum of industrial activities to be excluded from the area/criteria to comply with in order to establish in the area;
  - urban design guidelines for industrial developments – coverage, height, FSR, aesthetic standards etc.

The Saldanha Bay Municipality together with the Department of Environmental Affairs and Development Planning confirmed that an Environmental Management Framework (EMF) study will be compiled for the study area that falls within the total Saldanha Bay Municipal Boundary. More focus will be placed on the proposed Industrial Development Node, which will accommodate designated IDZ parks or areas based on five clusters (namely Renewable Energy, Steel and Minerals, Maritime and Dry-Doc).
SECTION SEVEN: BEST PRACTICE ANALYSIS: CASE STUDIES

In terms of this section, various international and national case studies were investigated and success elements were established, which should be taken into consideration when developing the proposed Saldanha IDZ. These were as follows:

Local Experience:
Coega Industrial Development Zone: Success Elements & benefits for investors

- A reasonable return on their investment.
- Coega is equidistant to world markets and this locational advantage will be amplified as world shipping changes.
- Coega is also well-placed to service South Africa’s internal market and SADC countries.
- Coega is also located at the heart of the ‘Detroit of South Africa’ – allowing for strong linkages and competitive advantages flowing from clustering with the existing auto industries.
- With up to 11 500 hectares available for development, Coega represents a vast land area, with low rentals leading to reasonable returns for investors.
- Serviced plots will be available in industrial and business clusters, suitable for heavy and light industries
- Access to the existing and proposed airport.
- Reliable, low cost energy supply.
- Industrial-standard water.
- International standard environmental management, including ‘Best practice’ waste management.
- The new deepwater port & container terminal.
- Industrial infrastructure purpose-built to client requirements.
- National road and rail linkages.
- Skilled labour force.
- Internationally-recognised training facilities
- Architectural and land usage policies
- Co-existing with Eco-tourism initiatives
- Strategic Government initiative
- One-stop shop investor services, facilitated by the Coega Development Corporation – a world-class IDZ operator.

East London Industrial Development Zone: Success Elements

- East London IDZ is a world-class 430 hectare industrial park and the country’s first operational zone
- Excellent transportation links including national road, rail and air networks as well as the highly efficient East London Port
- The success of the Automotive Supplier Park at the IDZ has already helped to grow the local economy substantially and the IDZ is now aiming to repeat that success in a number of new sectors including renewable energy, mariculture and bio fuels
- The IDZ concept is rooted in the idea of clustering industries together to encourage logistics savings.
Further features of an IDZ include the **proximity of the industrial complex to the port, transport, and other major infrastructure** that can generate benefits relating to more efficient supply chain management, better access to manufacturing inputs, and more efficient access to markets.

The East London IDZ has a designated customs controlled area, which allows for duty suspension for the production of exports and VAT suspension for supplies procured in South Africa.

It also offers manufacturers an ideal location for the operation of a competitive and efficient industrial plant.

This recently-constructed zone boasts **state-of-the-art infrastructure**, allowing for the smooth operation of investor plants within the IDZ.

Positioned only six kilometres from East London’s river port, and two kilometres from the airport, the East London IDZ gives new meaning to transport networks proximity.

East London IDZ commenced with the development of the first cluster in the zone, the Automotive Supplier Park (ASP). The ASP is the third of its kind in South Africa and it offers investors centralised logistics services and shared amenities.

East London IDZ is moving quickly towards achieving its goal of being the ‘solution for companies to be globally competitive through increased efficiency’.

The success of the East London IDZ to date has been underpinned by the company’s ambition to provide infrastructure for investors, as well as design real benefits for each investor resulting in more efficient and cost effective operations.

To ensure streamlined business solutions, the East London IDZ offers **investors a government services facility** for the necessary regulatory and documentation services.

East London IDZ’s **approach is cluster-driven to ensure compatibility of investors** and to explore possibilities of shared logistics and services in an attempt to improve each investor’s bottom line.

**SWOT Analysis - Saldanha Bay Municipal Area**

In order for us to understand the dynamics of the local area, especially in terms of the port and the possibility of further industrial development within the proposed development zone, we take a closer look at the Strengths, Weaknesses, Opportunities and Threats (SWOT) within the Saldanha Bay Municipal area.

**Table 8**  
**Strengths, Weaknesses, Opportunities and Threats within the Saldanha Bay Municipal area**

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
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<tbody>
<tr>
<td>✓ Central location of local area in terms of world markets and Southern</td>
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<tr>
<td>hemisphere economies</td>
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<tr>
<td>✓ High growth potential for internationally competitive industries – linked</td>
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<tr>
<td>to the port for easy trade access</td>
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<tr>
<td>✓ Industrial and port development could lead to sustained local economic</td>
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<tr>
<td>growth</td>
<td></td>
</tr>
<tr>
<td>✓ Port is the greatest asset of the municipal area and a catalyst for</td>
<td></td>
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<tr>
<td>economic growth</td>
<td></td>
</tr>
<tr>
<td>✓ The port is the only deep water port that is accessible to African</td>
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<tr>
<td>West Coast Offshore oil and gas industry</td>
<td></td>
</tr>
<tr>
<td>✓ Local economy dominated/concentrated by Manufacturing and Trade sector.</td>
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<tr>
<td>✓ Low level of skills in the local workforce, especially in terms of</td>
<td></td>
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<tr>
<td>industry related skills (technical skills).</td>
<td></td>
</tr>
<tr>
<td>✓ Currently not enough employment opportunities in the area.</td>
<td></td>
</tr>
<tr>
<td>✓ High Leakage, due to close proximity to Cape Town (especially in terms</td>
<td></td>
</tr>
<tr>
<td>of training and job opportunities)</td>
<td></td>
</tr>
<tr>
<td>✓ Port close to Cape Town – difficult to compete</td>
<td></td>
</tr>
<tr>
<td>✓ No ship repair facilities (however, possibility</td>
<td></td>
</tr>
</tbody>
</table>
- Strong potential for Oil and Gas Industry to develop on the West Coast. Will have significant impact on the Saldanha Bay Municipal area in terms of downstream development opportunities (e.g. possibility of Saldanha to develop as supply hub, major industrial projects to possibly be established in the area and utilise natural gas as feedstock, fabrication to occur etc.).
- PetroSA storage facilities are an important asset making the port more attractive to the Oil and Gas industry.
- Large raw labour resource
- Local authority is committed to attract industrial growth
- Relatively strong Manufacturing and Trade sectors.
- Strong potential for SMME development.
- Well developed residential areas with supportive facilities
- Well-established and reliable utility services in local area.
- Well-established infrastructure:
  - Built settlements – high growth potential and low human need
  - Transport – R45 between Malmesbury and Saldanha
  - R27 between Cape Town and Saldanha
  - Major harbour
  - Number of railway lines connections
  - Airport (with possibility of development / expansion)

**Opportunities**

- Development of an Industrial Development Zone (IDZ) – scope for massive economic growth, especially area close to the port
- Saldanha has the potential to play a significant part within the oil and gas industry, either on the fabrication side or on the establishment of major industrial projects that will utilise natural gas as a feedstock.
- Industries / industrial development should diversify away from only steel related industries.
- Many downstream opportunities - especially for beneficiation of various products (raw material beneficiation – minerals, tiles, iron-ore etc).

**Threats**

- for future development by NPA)
- Harbour facilities need to improve / expand – especially in terms of container loading / facilities (container terminal is very expensive)
- Current bulk electricity supply capacity is limited – could be problematic for future development in area
- Bulk water under pressure – especially if future heavy industry development occurs
- Fishing industry saturated in decline
- Lack of investment in the area – however, lot of recent interest in Saldanha Bay
- Land availability – municipality owns no land within the proposed industrial development zone.

- NPA does not proactively / timeously respond to the opportunities
- Concerns regarding future bulk water and electricity supply – especially in terms of heavy industries coming into local area
- Environmental issues – incorrect perceptions relating to industrial development vs. environmental sustainability (tourism development)
- Small town mentality – especially at community level
- Own interests agenda’s of certain groupings
- Private land ownership – makes the price of land expensive and discourage bona fide industrial development
| Specialist services and skills training within Saldanha Bay is necessary to attract further industrial investment | Limited job opportunities for growing number of job seekers. |
| Saldanha port can play complimentary role to Cape Town port – which is reaching its capacity | Strong competition from the rest of the Western Cape in terms of Trade, Finance, Manufacturing and Tourism. |
| Possibility to develop a dry dock within Saldanha Bay – which would create various job opportunities (high-tech, highly qualified jobs) | High levels of unemployment and crime throughout South Africa. |
| Heavy engineering and ship repairs, particularly for offshore oil and gas industry | Concentration of heavy metal particles in the water in the bay affects the growth potential of the mussel / mariculture industry. |
| Port has the capacity to expand (Oil and Gas fabrication will start this year and in terms of future development plans - ship repair / building, increase footprint in energy sector, the possibility of an oil pipeline from Saldanha to Cape Town – PetroSA and recreation activities on breakwater side such as restaurants, curio shops, walking areas etc.) | |
| “Critical mass” for container storage is growing and will be feasible for the port to operate as a container terminal | |
| Opportunity exists to improve air links | |
| Offshore gas creates option for gas turbines, cheap fuel / electricity, feedstock to big industries, fabrication possibility, Saldanha could possibly become supply hub of the west coast | |
| Exploration of oil and gas could be an opportunity to build oil platforms in the local area | |
| Large existing raw labour pool available for specific skills training | |
| Municipality should form public-private partnerships / joint ventures / land availability agreements with land owners to unlock land | |
| Close proximity of the N7 and R45 national highways. | |
| Strong transport linkages with the surrounding economies. | |
| Oil and Gas Infrastructure | |
| Development of Harbour | |
| Potential for an Airport (possible plans to upgrade the local airport) | |
| Possibility to develop a 450MW power plant within the local area – unskilled labour needed | |

Source: Compilation of Demacon, 2009; LED Strategy, 2005; Urban Dynamics, 2003 & Other
Checklist for a Development Zone / IDZ Development

Table 9 Preliminary checklist for the development of a Development Zone / IDZ

<table>
<thead>
<tr>
<th>PRELIMINARY CHECKLIST</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the region have potential to develop?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Possibility to develop connections within the region, then seek connections outside of region</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Areas of economic activity should not be situated too far apart</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Develop region from the inside and then make contact with adjoining regions for further development and extensions</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Routes linking several economic centres, countries, ports</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>One or more mode of transport</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Deep water port</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Area / zone along important connectivity routes between different cores</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Efficient transport (promote internal and external trade)</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Land availability</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Efficiency of services and infrastructure – well-established reliable utility services (water, electricity, sewage treatment, telecommunications)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Networking - Public-Private partnerships / joint ventures / land availability agreements in order to attract investments and attain land</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Government support and facilitation needed</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Development incentives (tax incentives)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Human resources - Skilled labour force</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Take environment into account (EIAs etc.)</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Possible markets</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Funding for development</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Raw materials</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Leadership and vision</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>E-commerce and IT as development base in globalisation</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Note: Some of the above are illustrated as “Yes” as well as “No”, due to current limiting factors (i.e. Land availability - there are land available in the area (Yes), but it is in the hands of the private sector and should be purchased in future for further development (No))

Imperatives for establishing an IDZ within Saldanha Bay

The development of investment incentives for any area is influenced by a number of factors. In this section, certain aspects which influence the choice of investors relating to locations will be highlighted. These are as follows:

✓ Legal considerations
✓ Land
✓ Planning Legislation
✓ Zoning
✓ Investments
Saldanha Development Zone Pre-Feasibility Analysis - Final Report, OCTOBER 2009

✓ Loans / Start-Up / Venture Capital
✓ Health and safety by-laws
✓ Locational Considerations
✓ Utility cost and reliability supply

Sustainable local economic development does not necessarily result from fast track procedures. The retention, expansion and attraction of businesses and industries are one of the most productive ways of stimulating the local economy and creating new employment opportunities. For most industries, the decision to expand local operations or relocate to a new area is influenced by a number of factors.

8 SECTION EIGHT: PRE-FEASIBILITY ASSESSMENTS ON THE ESTABLISHMENT OF AN IDZ

Saldanha Development Zone Structure and Layout

In our findings throughout the study, we suggest the following in terms of the layout and structure for the proposed Saldanha IDZ: The proposed Saldanha IDZ must be divided into homogenous zones, where clusters are grouped together. The IDZ should be divided in terms of three different precinct approaches, namely:

✓ **Precinct 1** – All the noxious industries / clusters should be situated within this precinct. In other words, all the heavy industries / extensive industries (such as steel processing plants, pelletisation plants etc.) will be situated within this precinct. This is also where the bigger anchor industries will be situated. These anchor industries will need vast land space / stands for development (e.g. 80 ha to 100 ha stands). This area should be very flexible in order to handle these bigger anchor industries.

✓ **Precinct 2** – This precinct can consist of smaller stands (0.5 ha to 1 ha stands) and will be a combination of importers, distributors, assembly plants etc. This precinct will also consist of manufacturing and assembly, but it will not necessarily be noxious industries.

✓ **Precinct 3** – Keep as open space for future expansion purposes of the IDZ, in order to have flexibility in future. This precinct should be flexible and tailor made / designed according to the market demands and will also depend on the take-up of the area. This could consist of either heavy industries or lighter industries (assembly plants), but should be able to be flexible in terms of both.

As far as the establishment of the Saldanha IDZ is concerned, there are broadly four options available (refer to Figure 1):

**Option 1 – IDC / Alpha cement area:**
Consolidate the existing IDC area (area 1.1 - 138 ha), the land earmarked for the future Alpha cement plant (area 1.2 - 113 ha), and the vacant land to the north thereof around route R79 (142 ha) into a single Industrial Development Zone. In total this area could present about 393 ha of land for establishment of the IDZ. Other benefits associated with this option, is the fact that it is located immediately adjacent to the Port Area and it is served both by rail and road (R79).
The major constraint pertaining to this option is the fact that there are a number of different land owners that need to be brought on board. This includes Saldok (area 1.1), Holcim South Africa (area 1.2), Samancor and Anglo Operations (area 1.3). The existing proclaimed IDC industrial area (area 1.1) and its associated layout plan will then have to be incorporated into the IDZ layout, while areas 1.2 and 1.3 will have to undergo a fully fledged township establishment process as these areas currently comprise farmland. If this option is decided upon, then area 1.1 can be utilised to accommodate light industrial activities; area 1.2 which is directly adjacent to the railway line and opposite Saldanha Steel can be earmarked for heavy industrial activity (113 ha), and area 1.3 to the north which covers about 142 ha of land can be utilised for future expansion of the IDZ (around route R79).

**Option 2 – Parklands IDZ area:**
This option focuses on the western section of the northern Back of Port area immediately adjacent to the railway line. It comprises the existing Parklands IDZ initiative (area 2.1) which holds about 285 ha of land, as well as the pockets of land to the north (area 2.2) and south (area 2.3) thereof which hold about 145 and 58 ha of land respectively. This brings the total land area to about 488 ha.

The area has access to the Oryx railway line and the Vredenburg-Hopefield railway line, but road access will have to be improved significantly in order to serve a future IDZ development. The site is also located very close to Vredenburg town. Land ownership is shared between Parklands, Anglo Operations and Plasto Prop 5, and although a township establishment application has been submitted for the Parklands IDZ area (area 2.1), no township establishment has been approved yet. All three land parcels thus currently comprise agricultural land. If option 2 is adopted, then the development approach should be to earmark area 2.1 for light industrial uses (285 ha); area 2.2 which is directly opposite Namakwa Sands and adjacent to the Oryx railway line could be used for heavy industries (145 ha), and area 2.3 towards the north which covers about 58 ha of land could be utilised for future expansion of the area.

**Option 3 – Langeberg area:**
The third option is to earmark the Langeberg area to the east of the Oryx railway line, south of the Vredenburg-Hopefield line, west of route R27 and to the north of route R79 as the future IDZ area. The Langeberg initiative is under single ownership (601 ha) and it could be expanded to the north (268 ha) and south (77 ha). This brings the total land area to about 946 ha.

As highlighted above, the area could be linked to both railway lines and both the two major roads linking Vredenburg-Saldanha to the City of Cape Town (R45 and R27). This option also holds an opportunity for the IDZ to be expanded further to the south of road R79 in future (should there be a need for such expansion).

The entire area is still farmland as no township establishment application has been approved for any part of it. The most appropriate way to develop the area, should option 3 be decided upon, would be to earmark phases one, two, three and four (see area 3.1) for light industrial use (± 300 ha); phase five and six (± 300 ha) for heavy industries (area 3.2), and area 3.3 (268 ha and 77 ha) for future expansion.
In terms of this approach the heavier industries are thus located/consolidated around the Oryx railway line and adjacent to Namakwa Sands, while the lighter and smaller industries are located closer to the main road network in the area, and are thus more accessible to regional traffic.

**Option 4 – Inclusive of all areas:**

In order to make the IDZ successful in the long-term and to provide for possible future expansions, all of the developable / vacant land (± 2 500 ha) should be secured in the short to medium term. This will prevent speculative buyers to gain hold of the land as was done in the entire area under single ownership.

All four the options referred to above hold some advantages and some disadvantages:

- **Option 1** is functionally closest to the Port Area, but it could be difficult to consolidate the entire area under single ownership.
- **Option 2** is close to Vredenburg and it can be served by both road and rail. The access road will, however, have to be upgraded in order to fully unlock the development potential of this area.
- **Option 3** is well served by rail and both regional routes passing through the municipal area which are linked to the area. It is also the largest area and the 601 ha of land is under single ownership.
- **Option 4** is necessary to make the IDZ successful in the long-term and provide for possible future expansions.
Figure 1 Development Perspective
**Costing:**
The development of the Saldanha IDZ must be seen in the context of the broader economy and investment environment in which it is located, as this environment will influence the nature and the success of the IDZ. Firstly, the establishment of an IDZ forms part of a national programme aimed at generating dedicated development in certain areas. This programme provides the basis on which any IDZ in South Africa is founded. The IDZ needs to have an international investment focus – the IDZ normally has the tendency to have a strong speculative drive which will be further unleashed within the market.

The Saldanha IDZ is also influenced by the socio-economic, political and investment characteristics of the Western Cape Province, and the local economy. This milieu poses several opportunities, which can be exploited for industrial and commercial production and beneficiation activities. The development and investment opportunities are furthermore expanded by changing international markets and trading patterns and the opportunities resulting from it. These opportunities are indicative of the nature of the core and supportive industries to be established in the IDZ.

However, the development of these opportunities is affected by the enabling environment in which the IDZ will be established. This refers to aspects such as transport and freight facilities, engineering services, environmental management, financial support and institutional arrangements.

The IDZ is by nature a government-driven initiative, which means that it is a long-term initiative with substantial economic benefits over the long-term. This implies that the government will have to sponsor / fund such a development.

**Current cost of land (industrial and agricultural) within the Saldanha Bay area**

In terms of the cost of land within the Saldanha Bay area, the following was determined:

- Prices for light industrial stands vary between R625m² to R969m². The smaller stands of 250m² to 2 000m² are approximately R625m² and the bigger stands of 4 422m² are approximately R969m² and higher.
- The price of raw agricultural land is estimated to be between 20% and 30% of the abovementioned prices, but it is difficult to estimate. The estimation of prices all depends on the provision of services on the specific land etc.

**Economic Impact Assessment:**
This section provides the results of an economic impact modeling exercise performed by Demacon, based on the proposed development concept and quantities. The economic impact is shown in terms of the direct, indirect and total economic effects that the capital investment and operational expenditure of the development will induce in the economy. Economic Impact Modelling for all industries (heavy and light) as well as Economic Impact Modelling in terms of only light industries will be undertaken. Impacts are measured in terms of the following:

- **Business Sales** refers to the value of new business sales (turnover) generated in the economy as a result of the proposed new development.
GDP refers to the value of all final goods and services produced during a one year period within the boundaries of a specific area as a result of the proposed new development.

Total employment reflects the number of additional jobs created by economic growth due to the proposed new development. Note that the public costs of attracting these employment opportunities, as well as the quality thereof, are not necessarily reflected.

The following table (Table 10) provides a synthesis of economic impact modeling results for all industries (heavy and light), for the construction as well as the operational phases of the envisaged R91.4 billion investment.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>INPUT VALUE</th>
<th>TOTAL IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Phase (Once-off)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional Business Sales</td>
<td></td>
<td>R217.2 billion</td>
</tr>
<tr>
<td>Additional GGP</td>
<td>R91.4 billion</td>
<td>R72.5 billion</td>
</tr>
<tr>
<td>Additional Employment</td>
<td></td>
<td>433 300</td>
</tr>
<tr>
<td>Operational Phase (Sustained Annually)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional Business Sales</td>
<td></td>
<td>R113.6 billion</td>
</tr>
<tr>
<td>Additional GGP</td>
<td>R48.8 billion</td>
<td>R51.8 billion</td>
</tr>
<tr>
<td>Additional Employment</td>
<td></td>
<td>191 340</td>
</tr>
</tbody>
</table>

The proposed development could, in its first phase (assuming an approximated third of the total development), more than double the size of the district economy’s GDP. If the proposed development were not to occur, the above benefits in terms of additional business sales, GGP and employment, would be lost to the local economy.

The following table (Table 11) provides a synthesis of economic impact modeling results for only light industries, for the construction as well as the operational phases of the envisaged R59.2 billion investment.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>INPUT VALUE</th>
<th>TOTAL IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Phase (Once-off)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional Business Sales</td>
<td></td>
<td>R140.7 billion</td>
</tr>
<tr>
<td>Additional GGP</td>
<td>R59.2 billion</td>
<td>R47.0 billion</td>
</tr>
<tr>
<td>Additional Employment</td>
<td></td>
<td>280 200</td>
</tr>
<tr>
<td>Operational Phase (Sustained Annually)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional Business Sales</td>
<td></td>
<td>R73.6 billion</td>
</tr>
<tr>
<td>Additional GGP</td>
<td>R31.6 billion</td>
<td>R33.5 billion</td>
</tr>
<tr>
<td>Additional Employment</td>
<td></td>
<td>123 990</td>
</tr>
</tbody>
</table>
9 SECTION NINE: RECOMMENDATIONS & WAY FORWARD

The purpose of this chapter is to formulate recommendations and a way forward for industrial development / establishment of an IDZ within the Saldanha Bay municipal area.

**How does a region go about developing a Development Zone?**

One mechanism can be to create a caucus group structured as an implementing authority or as an association under Section 21. The objectives of this group are to solicit cooperation and coordination from DTI as well as establishing the basic concept and core principles behind the project. This group would also bring together and commit the key stakeholders at all levels (political support is necessary to make the IDZ successful). Once project interest and commitment is established, then fund raising can be initiated to cover the project start-up costs and feasibility determination. Additionally, a Project Director is named to direct the project activities.

Once the project has moved forward, then a second step could be the formation of a development company. This company functions as a profit oriented development holding company that establishes the developmental parameters for the project. It applies for the Development Zone license. The company would coordinate the development of off-site infrastructure development with the competent governmental entities at all levels.

All Development Zone operation and promotion should be done by private sector development groups. In the event that the development corporations are public sector share holdings, then they are recommended to develop concessions with private developers for the development, promotion and operation of the IDZ.

The off-site infrastructure will be the responsibility of the government through its corresponding Departments, Parastatals and Development Banks. The Development Zone developers are responsible for the respective on-site infrastructure development.

**Critical Success Factors and Guidelines**

Some of the first steps needed to be taken, in terms of the establishment of an Industrial Development Zone, are to have support networks in place. This is as follows:

- Obtain buy-in
- Stakeholder contact-making
- Sponsorship
- Participation
- Networking
- A high level of innovation

**Development Phasing**

The development concept should be developed in phases. Historically, trends have shown on numerous occasions that the tendency to develop an industrial park / area in one phase could be potentially detrimental and it is more feasible to plan the development in phases to accommodate traditional take-up rates in such developments.
For the Saldanha IDZ, it is suggested that Option 4 would be the most suitable option over the long-term. The available vacant, developable land of 2 500ha should be secured for future development. It is suggested that tight phasing should take place and that the first phase could consist of approximately 500ha to 750ha. As this study is only a pre-feasibility study, an appropriate development-phasing plan should be developed in terms of the next phase (i.e. Feasibility phase).

**Recommendations and Way Forward**

As mentioned above, one of the most important factors for the success of the proposed Saldanha IDZ is political support. Without the required political support (provincial and national) and buy-in, one will not be able to successfully develop a project of this nature. The most important success factors that should be in place before the Saldanha IDZ could be developed include the following:

- **Securing the required land** for development
- **Securing funding** to provide the required infrastructure, services and amenities
- **Securing a few anchor tenants** in the proposed Saldanha IDZ development
- Ensuring sound environmental management through an Environmental Management Framework (EMF) for the IDZ development
- Ensuring the correct operation and management structure and capacity

The recommended development process to be followed as the way forward for the Saldanha IDZ is illustrated in Figure 2 below:
Based on the pre-feasibility findings, it is clear that all indications are that an IDZ would be feasible and economically beneficial, subject to full feasibility analysis of the identified clusters and further technical analyses. As indicated throughout the study, Saldanha already has various significant assets that make it an ideal location for such a development, such as:

- A suitable location in terms of the Saldanha deep water port
- Vast open spaces of land suitable for development of light or heavy industry, although land is in the hands of the private sector and needs to be secured as soon as possible
- Various minerals, steel and other reserves suitable for related downstream industries
- Opportunities to develop prestige industrial sites
✓ Possibility to be the first IDZ within the Western Cape Province (which could consider developing and promoting green industries)
✓ Possibility for developing and expanding the current airport (to an international standard airport), which could lead to further opportunities and benefits of the IDZ
✓ The nearby areas of Cape Town, Atlantis etc., which could also provide a substantial labour force.

Saldanha IDZ would be the fourth IDZ along the South African coastline, which makes it of utmost importance in terms of various factors such as anchors, the role it will play in South Africa and on the West Coast etc. The Saldanha IDZ will be uniquely positioned and differentiated from the other IDZ’s along the coastline and within South Africa. However, political support, buy-in, funding, securing of land and partnerships will be key to the successful development of the Saldanha Bay IDZ.