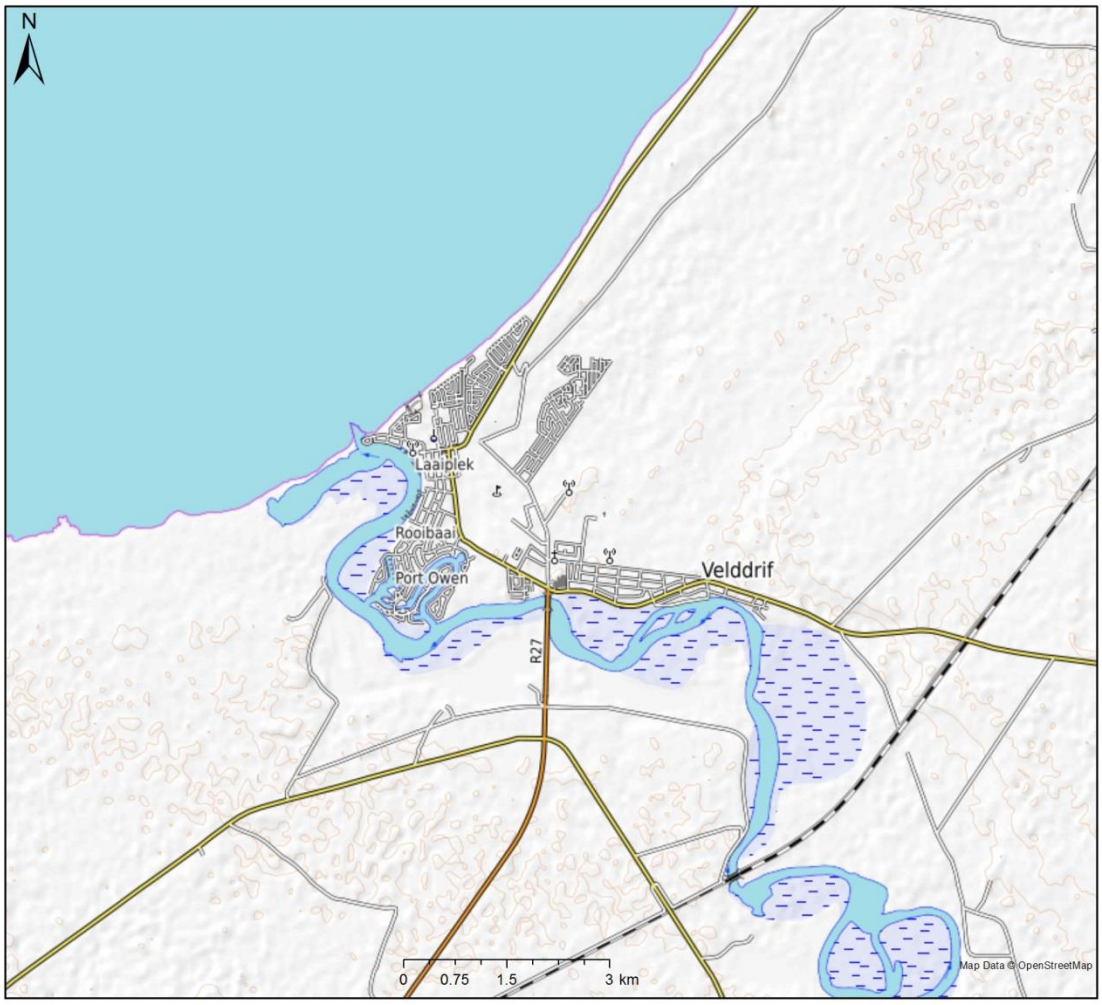
PROPOSED AD HOC AMENDMENT OF BERGRIVIER SPATIAL DEVELOPMENT FRAMEWORK: DEVELOPMENT PROPOSALS, 2012 - 2017

with specific reference to Velddrif and Laaiplek

and the inclusion of Portion 1 of Farm Vlaminke Vlei no 54.



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OUR REF: VEL/10146/AC

A Summary of Spatial Development Proposals for Velddrif and Laaiplek

It is proposed that the vision statement is amended (underlined section added) to read:

A vibrant, well managed and attractive Velddrif and Laaiplek which offers safe, integrated open spaces, streets and amenities, where the unique landscape, cultural and social assets, <u>its proximity to the IDZ, location within a functional growth potential area and the West Coast Biosphere</u> create opportunities for residents and attract tourists.

To reach the vision, the development of Vlaminke Vlei is proposed, as the development of the southern bank of the Berg River will achieve the four proposed objectives. Hence, the following development proposals for Vlaminke Vlei should be considered:

Objective 1: Grow the economy of Velddrif and Laaiplek

Development Proposal 1: *Exploit accessibility and proximity and capitalise on the Bay of Saldanha as a growth node*

Development Proposal 2: *Provide for zoned land* to change the economic status of Velddrif

Development Proposal 3: Exploit **tourism and p**romote land uses directly related to the river, estuary and coast as resource

Development Proposal 4: *Use locational directives to guide mixed land use in existing and proposed developments.*

Objective 2: Protect the Sense of Place

Development Proposal 5: *Promote industrial uses directly related to the river, estuary and coast as resource*

Objective 3: Mitigate Climate Change

Development Proposal 5: *Adopt development and design criteria catering for natural processes in the river Estuary:*
Floodplains
Riverbanks
Saltpans
Canals and Waterways
Artificial Islands
Aquaculture/Fish-farming

Objective 4: Provide services efficiently and effectively

Development Proposal 6: *Provide municipal controlled services.*

Contents

1. Spatial development proposal for Velddrif and Laaiplek

As a Spatial Development Framework Document consists of two components, this document represents second part i.e. the Framework. The two components are:

1. A Status Quo: analyses the municipal and regional space and sector activities for which the SDF is written. From the analysis a vision is proposed.
2. A Spatial Development Framework: provides proposals and guidelines after spatial principles and tools were applied to generate concepts, obtain the buy-in from abutting municipalities, other government departments, politicians and the public, and provides an implementation plan and budget.

This Report, the Spatial Development Framework, consists of development proposals specifically related to Velddrif. Proposals in the BSDF, VLPP and the WCSDF are not repeated but only referred to should they have relevance to proposals made for Velddrif and Laaiplek. Four objectives govern the proposals made:

a) Grow the economy of Velddrif and Laaiplek (spatial justice)
b) Protect the Sense of Place (spatial resilience)
c) Mitigate climate change. (spatial sustainability)
d) Provide sustainable services (spatial efficiency)

These objectives are supportive of specific SPLUMA principles as stated next to it.

The proposal is concluded by a comparison of relevant legislation to demonstrate compliance: i.e.

The compliance comparisons are made between the proposals in this document and the Bergrivier SDF 2012 – 2017 strategies and the West Coast District SDF and IDP.

2. Velddrif's vision

It is proposed that the vision statement is amended (underlined section added) to read:

A vibrant, well managed and attractive Velddrif and Laaiplek which offers safe, integrated open spaces, streets and amenities, where the unique landscape, cultural and social assets, <u>its proximity to the IDZ, location within a functional growth potential area and the West Coast Biosphere</u> create opportunities for residents and attract tourists.

The SWOT analysis highlighted aspects for which proposals are generated in the section below whilst it also provided guidelines aligned with the principles of SPLUMA. Proposals are made for all the environments that represent sustainable development i.e. economic, social and built and the natural environment.

3. Objective 1: Grow the economy of Velddrif and Laaiplek

To promote the principles of **spatial justice** and **resilience** the proposals to grow the economy focus on zoning developable land appropriately to create an environment conducive to employment and to change economic sector representation.

Spatial Implications and Guidelines from the Status Quo related to economic growth

Location/ proximity and sphere of influence (growth potential)

- The West Coast shows an annual Real Growth in GDP of 3.1% compared to 4.1% for the Western Cape, reason being that the contributions of Agriculture & Fishing decreased and Manufacturing experienced weak growth. The Saldanha Bay-Vredenburg area is the nucleus of development activity in the district, due to Saldanha Bay Port attracting economic activity and enhancing growth potential of adjacent towns and nodes. Development should be focused primarily in areas with the highest growth potential (as per growth potential study 2014 and WCSDF), which are clustered within the Saldana Bay and Swartland Municipalities. Velddrif is within easy reach of the Saldanha Bay Industrial Development Zone, presenting high development potential for the town.
- Interaction between towns in the district happen spontaneously, and movement of people, business and resources, are not tied to municipal boundaries and cut across boundaries due to factors such as convenience, proximity, variety, etc. Velddrif is one such a town which form part of the Saldanha Bay cluster of activities.
- Vredenburg Saldanha and St. Helena Bay's proximity to Velddrif and resultant sphere of influence on each other is more pronounced than that of Piketberg being further removed from Velddrif. Vredenburg is a major regional centre and Piketberg is the main town of the Bergrivier Municipal Area.
- Velddrif is located nearly the same distance from the IDZ as is St Helena Bay, and offer an alternative residential node for the industrial economy, being both a fishing and tourism settlement.

Proposals to exploit accessibility and proximity

Within the regional context, Velddrif is still the place where one "pass through the river to the northern bank" as Velddrif is easily accessible on the R27 and the R339 which were identified as freight routes. It is not an industrial hub like Saldanha Bay or an economic hub like Vredenburg. However Velddrif is in close proximity of these hubs and the IDZ.

As goods and people need to move by road, rail, air& water, existing road and harbour infrastructure needs to be maintained and upgraded and access to rail infrastructure need to be improved to accommodate future growth, especially linkages to Saldanha Bay Port and proposed future IDZ.

3.1. Development Proposal 1: Exploit accessibility and proximity and capitalise on the Bay of Saldanha as a growth node

- Enhance the provision of public transport services that is reliable and regular and links to other long distance public transport opportunities i.e. from Vredenburg. With regards to air-traffic, one of the existing airfields has to be upgraded to a commercial airport.
- Upgrade smaller harbours i.e. Laaiplek & Port Owen to boost the artisan fishing industry and tourism.
- Velddrif and in particular its southern bank could provide housing to a wider geographical area, also supporting additional higher income housing options for people within the region including people working at the Saldanha IDZ.

Spatial Implications and Guidelines from the Status Quo related to economic growth

Sector representation

- Historic similarities exist between the economies of St Helena Bay (Velddrif/Laaiplek) and Saldanha Bay, both local economies being originally based on maritime trading and artisanal fishing. The economy of the Bay of Saldanha, being the only deep water port on the West Coast, is additionally based on the transportation of bulk goods and natural resources. Hence the economic sector representation of Saldanha Bay (primary 15%, secondary 29% and tertiary 56%) is closer to that of a developed economy than the economic sector representation of Bergrivier and thus Velddrif (primary 27%, secondary 28% and tertiary 45%). Economic sector contributions for developed economies are less and equal to 3% by the primary sector, between 18 -34% by the secondary sector and 63 -79% by the tertiary sector. Western Cape Province economy is closest to a developed economy with the primary sector representing 4%, secondary 24% and tertiary 72%.

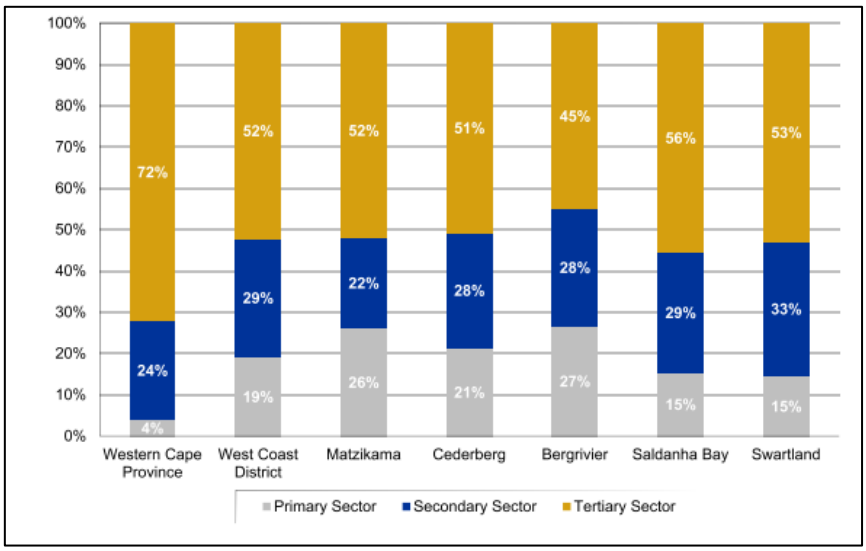


Figure: GDPR contributions per main sector, 2015

- Velddrif, Laaiplek and Noordhoek have a lack of appropriately zoned land. Industrial and

commercial land is required to change the economic status (from developing to developed) and economic sector representation (primary to secondary & tertiary) of the town. Industrial and commercial development can exploit the advantage Velddrif has due to its accessibility via the R27 and the R339 both identified as freight routes (per WCDM SDF).

- The current development focus within Velddrif and Laaiplek is residential, with some supportive commercial land uses. This need to change to commercial and industrial development with social and residential uses in support thereof. Such a change will bring about the absorption or redevelopment of large isolated residential developments that have not been taken up by the market.
- Conservation and associated direct enhancement of tourism should be strengthened to compliment industrial development. This will bring about diversity in economic activity, which has been a weakness in the economy of Velddrif and Laaiplek.
- As the tertiary economy grows, the integration of land uses intensify and the need for residential development at the location where these commercial and industrial uses take place or in close proximity thereto will increase. Thus location provides strong directives for land use mix.
- Acquire suitable land and adjudicate such land to identified and qualifying beneficiaries that would be supported in continuing agri- and aqua cultural produce on such land (Agricultural Land and Ocean Reform).

Proposals to provide for appropriately zoned land

As Velddrif's economy demonstrates a developing character, commercial and industrial land is needed to exploit Velddrif's advantage of its proximity to the IDZ

The economy of the region is driven by wholesale & retail trade, catering & accommodation services (24%), manufacturing (19%), agriculture, forestry & fishing (18%), finance, insurance & business service (15%) whilst the biggest contributors to employment is made by Commercial Services (39%), agriculture (29%), general government and CSP (15%) and manufacturing (11%).

The economy is a developing economy, as the primary sector is strongly represented and the secondary and tertiary sectors lag behind. The table below compares the contributions of a developed and developing economy such as that of the Bergrivier.

Sector	Sector Contribution Developing Economy Bergrivier (2013)	Sector Contribution: Developed Economy
Primary	Agriculture, forestry &fishing (18%)	0.8 – 3%
Secondary	Manufacturing (19%)	18 - 34%
Tertiary	Wholesale & retail trade, catering & accommodation services (24%) Finance, insurance & business services (15%) (Total 39%)	63 – 79%

A further comparison of Bergrivier's employment sectors (workforce distribution) to norms for developed and developing economies, is tabulated below:

		Workforce Distribution			
Three sector economy		**Developing /Traditional**	**Bergrivier**	**Developed /Transitional**	**Tertiary**
Primary	Raw	65%	29% (Agric)	40%	10%
Secondary	Manufacturing	20%	11%(Manu)	40%	20%
Tertiary	Services	15%	39%(Com) 15%(Gov) 54% Total	20%	70%
Quaternary	Information Services	Included in tertiary		Included in tertiary	Included in tertiary
Quandary	Human Service	Included in tertiary		Included in tertiary	Included in tertiary

The norms for zoned land in developed economies i.e. the space per economically active(EA) person required was calculated from various sources and provide directives for the extent of required developable appropriately zoned land.

Zoned Land /per EA person	Residential	Commercial	Industrial
Square meters (single residential developments)	200m²	14m²	70m²
Ratio 1 (norm tertiary economy)	14	1	5
Square meters (mixed use developments)	56m²	14m²	42m²
Ration 2 (norm tertiary economy)	4	1	3
Remarks	25 dwelling units/ ha, Erf size 400m², 50% coverage		

From the table above it is evident that for Velddrif"s economy to grow, opportunities in the secondary and tertiary sector have to be created. The provision of appropriately zoned land will enable Bergrivier Municipality to implement sector and development plans such as the LED and IDP Plans to create a conducive environment to change the economy from developing to developed.

Land Use	Residential	Commercial	Industrial
a) Actual (as per SDF 2012 – 2017)	355.2ha	21.6	43.2
b) Developable land required: (Zoned land + 30%)	355.3ha	Require 25.4	Require 127
c) Zoned land	248	17.8	89ha
Shortfall (b-a)	0	3.8	83.8

Considering population growth, it appears Velddrif has more than sufficient residential land. The number of households have to increase to 6 200 (931 opportunities required) to take up the provision of residential land currently provided for (See table below for required land in 2022). However with the anticipated increase in industrial and commercial activities in Velddrif and Saldanha Bay it is expected that population growth will increase and result in an increased uptake rate of developed erven.

Ha of land required in 2022	Residential	Commercial	Industrial
Proposed as per SDF 2012 – 2017	355.2	21.6	43.2
Developable land: (Zoned land + 30%)	301.2	10.6	52.9
Zoned land: 5269 households (2022)	210.8 (Average erf size: 400m2 in Velddrif)	7.4	37ha

3.2. Development Proposal 2: Provide for zoned land to change the economic status of Velddrif

- Provides for additional industrially and commercially zoned land as confirmed by the analysis above to enable economic and industrial activities that can change the economic status of Velddrif:
    - Industrially zoned land: 84ha
    - Commercially zoned land: 4ha of commercial land.
- Provide for residentially zoned land on the southern bank similar to Port Owen (higher income cohort) as there is limited development opportunities left within Port Owen and there is a need for another upmarket development for the higher income groups working in the IDZ or in the region development. Private residential development initiatives subsidize the lower income housing developments with investment into bulk infrastructure.
- Residential development on the southern bank and close to water interface provides for holiday housing options in Velddrif, supporting the local tourism market.

Spatial Implications and Guidelines from the Status Quo related to economic growth

Tourism

- West Coast is a popular tourist destination due to natural beauty, quaint coastal villages and proximity to Cape Metropole as primary tourist attraction.
- Opportunities for economic growth in rural areas exist, especially through the tourism sector.
- Rural development and tourism corridors are required to include rural nodes with economic growth potential. One such corridor or route is the West Coast Way with reference to two specific routes: the Berg Route and Foodie Route both including Velddrif
- Improve the following types of tourism
    - Holiday destinations – Coastal Towns with unique coastline
    - Adventure – recreational activities
    - Nature conservation and natural beauty
    - Cultural Tourism
    - Agri-Aqua Tourism

Exploiting tourism as part of the tertiary economic sector

As the estuary and coast are the main defining elements and economic resource of Velddrif, its conservation and capitalization (development) appears to be opposites. Its primary economic resource (the estuary and coast) has not changed, but the product being traded, i.e. fish has been replaced by experiences of beauty, safety and accessibility (tourism). Velddrif has become a tourist destination and therefore Velddrif's sense of place needs to be protected.

Velddrif and Laaiplek formed part of the hinterland and the river and marine resources were accessed by crossing the river to reach its northern banks. Laaiplek acted as freight harbour for the salt mining, fishing and agricultural activities. Freight was loaded onto ships to be transported to its destination and also brought into Laaiplek to be offloaded. The river was used as a transport route bringing freight to the harbour and transporting it upstream. Since then the economy of Velddrif has gone through several contractions due to changes in mode of transport i.e. sea, river and road replaced by rail, industrialisation, the establishment of the fish processing factory, and the need to replace technology, including limited access to fishing quotas. Agriculture has also contracted, and its contribution to the GDP is still declining. Tourism has formalized and increased, but lacks strategy, as there is little besides the natural beauty to attract people to settle and to visit. Most tourist activities takes place on land classified as commercial.

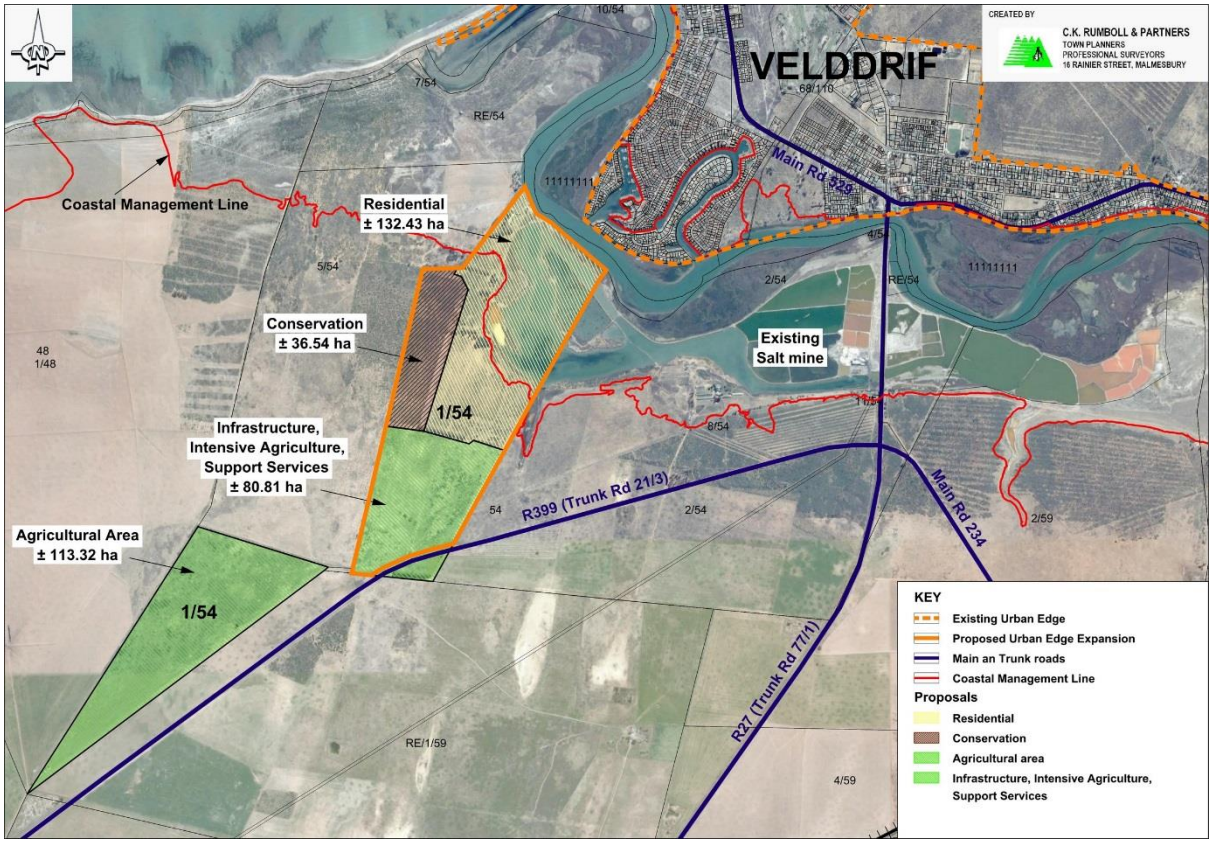
The table below provides some examples of uses that are practised or proposed (underlined):

Use	Primary	Secondary	Tertiary
Agriculture	Aquaculture Growing kelp	Bokkoms	Aqua & Agri tourism Educational (Conservation)
Industrial	Salt mining	Boat building Boat repairs Processing fish	Industrial tourism (salt pans and bird watching)
Commercial	Agri processing	Water transport (leisure) Water transport (commercial & industrial)	Restaurants; Educational (Water Sports); Accommodation, non-permanent

The establishment of the Port Owen Marina, with its associated small boat (yacht) harbour has done a lot to develop boating (yachting) as a recreational activity in St Helena Bay. St Helena Bay, being a well-protected bay is seen as a world class yachting basin. Port Owen acts as stand-over harbour to yachtsmen that sail round Africa. When South Africa lodged a bid to host the Olympic Games, St Helena Bay was put forward as where all the water (boating) activities were to take place.

3.3. Development Proposal 3: **Exploit** tourism and p**romote land uses directly related to the river, estuary and coast as resource**

- Developing Vlaminke Vlei (urban edge expansion – See Map 1) will expand building St Helena Bay as a world class yachting basin. In providing permanent and holiday housing, the development will be home to water sport enthusiasts and provide tourist and locals to have access to the waterfront and marine resources.
- Extend pubic access to water and link economic activities to existing tourism nodes i.e. Port Owen and Laaiplek harbour (introduce a boat shuttle).



Map 1: Proposed urban edge expansion – southern bank of Berg River

- Require the development of urban and architectural design guidelines (See Addendum A) to mitigate the transition in the sense of place but at the same time keep it specific for Velddrif and Laaiplek. The design and architectural guidelines should become a component of the Velddrif and Laaiplek Precinct Plan in preserving the sense of place of Velddrif. Such a guideline should extend beyond directives for street- and routes- and should include directives for riverscapes to guide resort and other development along the Berg River.

Spatial Implications and Guidelines from the Status Quo related to economic growth

<u>Land Use mix and location</u>

- Building on the vision of the Velddrif and Laaiplek Precinct Plan which identifies areas where industrial tourism mixed use spaces can be developed i.e. adjacent the Harbour at Laaiplek, the Old Factories on the northern bank of the river at Velddrif's southern entrance and Bokkomlaan.
- The Velddrif and Laaiplek Precinct Plan made several commercial development proposals. The plan highlighted that access to water (river or sea) by the public was limited, and movement linkages between activities and tourism nodes were required.

Location informs land use mix

The appropriated mixture and location of zoned land (industrial, commercial and mixed use) should enhance transition to a developed economy. Towns and cities fortunate enough to have a waterfront, in this instance along a river, can leverage its treasured asset for the good of the community. These areas provide the ideal potential for mixed use developments allowing for residential development that increase access and enjoyment of the river systems as well as other supporting commercial and industrial options.

Earmarking sufficient land for commercial and industrial purposes, with the appropriate micro level land use mix, as natural structural elements (river and coastline) and its sensitivity, limits options could cause reallocation of developed land and/ or earmarking land outside the developable settlement area.

The land requirements determined should not be considered as an absolute, as the location of the land, and in particular the land use mix (intensity) can bring about different land requirements. As land uses are integrated, which is a prerequisite for spatial sustainability, and the tertiary economy grows, the need for residential development at the immediate location where these uses take place or in close proximity would develop. To stay true to the principal of spatial justice, the provision of industrial and commercial land has to go hand in hand with the provision of residential land. The development focus within Velddrif and Laaiplek should shift from residential development with some supportive commercial land uses to commercial and industrial development with social and residential uses in support thereof. Such a shift will most probably bring about the absorption or redevelopment of large isolated residential developments that have not been taken up or have been taken up slowly by the market.

Development on the southern bank of the river, present the opportunity to ensure mixed land uses to include primary, secondary and quaternary economic activity.

Land Required:	**Southern Bank of Berg River**
Primary	Agri-processing
Secondary	Industrial activity
Tertiary & Quaternary	Tourism, commercial & Recreation
Residential	±620 erven (±33ha)

Although the extent calculated for commercial land is low (4ha), the integration (mix) of commercial and industrial uses is a prerequisite and this may cause a higher ratio of commercial spaces to be provided for. The south bank of Velddrif, although part of Velddrif, should form a centre of growth, connectivity

and sustainability in its own right through the development of mixed uses allowing for commercial and industrial developments.

3.4. Development Proposal 4: Use locational directives to guide mixed land use in existing and proposed developments.

- The development of the southern bank of the river, west of the R27 entering Velddrif,
  a) Should constitute a growth centre given its connectivity should be included in the development footprint (urban edge) of Velddrif and Laaiplek are (See Map 1) and should be developed as such.

Map 2: Illustration of location driving land use mix

  b) Could shift the development focus within Velddrif and Laaiplek from residential development with some supportive commercial land uses to commercial and industrial development with social and residential uses in support thereof (See Map 2).

4. Objective 2: Protect the Sense of Place

The principle of resilience enhances sense of place.

Spatial Implications and Guidelines from the Status Quo related to sense of place

Sense of place

- Strong sense of place due to Velddrif/ Laaiplek's unique position on the north bank of the Berg River, and the vast open space of the surrounding estuary. Fishing boats entering the river from the sea via the river mouth to moor along the river. Over the years development decreased the sense of place as no aesthetic guidelines for development in general and in particular along the river, the river route-scape and coastline interface exists.
    - Settlement form was dictated by access to the river and easy and safe transfers of men and cargo from boat to shore and vice versa. Regionally settlement pattern is determined by Saldanha Bay harbour and main access route to Namibia i.e. N7.
    - Wind and sand storms (from urban development that removed coastal vegetation and ploughed agricultural fields) impact on the landscape and development. The northern bank of the Berg River, where Velddrif and Laaiplek is located, is on the receiving end of the summer wind.
    - The golf course as a major buffer between the three urban areas of Laaiplek, Velddrif and Noordhoek. Extending the canal and linking the golf course and the marina will bring about integration of the marina, the surrounding precincts of Laaiplek and the golf course. .
    - The precinct's urban form and structure constrain permeability and legibility. There is a lack of public access to the waterfront and beach.

Defining elements of sense of place

Velddrif and Laaiplek formed part of the hinterland: the river and marine resources were accessed by crossing the river to reach its northern banks. Freight brought to Laaiplek by sea was either taken away by road or taken upstream by boats, freight from upstream was brought to Laaiplek by boat, then shipped and taken by sea to its destinations. The economy of Velddrif has gone through several contractions due to change in mode of transport, industrialisation, the establishment of the fish processing factory, the need to replace technology, and limited access to fishing quotas. Agriculture has also contracted and its contribution to the GDP is still declining. Tourism has formalized and increased, but lacks strategy, as there is little besides the natural beauty to attract people to settle and to visit.

The sense of place of Velddrif and Laaiplek is a settlement along the flood plains of the Berg River estuary (wide open spaces) and on the bank of the Berg River as well as along the coast (beauty). This characteristic can be experienced along the main road and at the entry points to the town:

- Along the main road glimpses of the estuary (western direction), marina and harbour are being observed.
- At the entrance from the south (R27): the flood plain of the estuary with the settlement on the northern banks of the river is most prominent.
- At the entrance form the east: Sandveld fynbos Plato with scattered rural development (small holdings) and the river flood plain are observed.
- At the entrance from the North West: township and settlement after a long stretch along the coast are being observed.

Enhancing the sense of place of Velddrif/ Laaiplek will stimulate economic development and in particular in the tourism sector as this is the product the town trade. New development as proposed on the southern bank will increase connectivity (not viewing the river as a natural separation) and stimulate the re-orientation of the town and re-definition of the structural elements, its current limitation and economic potential.

The Velddrif / Laaiplek precinct plan made proposals (8 Focus areas) to strengthen entry points and focus areas and to enhance Velddrif and Laaiplek's sense of place. These proposals should be implemented. The proposals made in the Velddrif Laaiplek Precinct Plan, which focus on a micro scale, intend to achieve social justice and resilience i.e. it proposes

- better design, use, integration and protection of natural resources, cultural assets and unique natural features;
- Strengthening Velddrif's current identity through integrating the settlement nodes into a coherent network of destinations, routes, landmarks and spaces that draw people and activities. Appropriate places, activities and built form in turn become attractions in their own right and these places can offer opportunities for socio-economic inclusion and a wide range of new economic opportunities.

The Velddrif/Laaiplek precinct plan is silent on the expansion of developable land beyond the proposals in the BSDF.

The precinct plan focusses on enhancing commercial space, whilst no provision is made for industrial and intensified or concentrated primary economic activity as the basis for tourism (quaternary activity and mixed land use). What is required is to protect the resources (estuary and coastline) and its natural beauty which will enhance tourism, and at the same time diversify and intensify the economic

base (product) so that both the natural beauty (river and coast) and the industries become a tourism attraction.

Additional development proposals to the Velddrif/Laaiplek Precinct Plan include developing the southern bank of the river. These locations, and in particular the Southern Bank will be the preferred area to develop as it will:

- It will enhance access to the water.
- Its proximity to the IDZ will increase Velddrif's exposure to the economic activity in Saldanha bay.
- It will offer a wide range of housing topologies, making it easier for people from all income groups to benefit from the beauty of the river.
- It will increase the use of the river and bay for recreational activities.
- The right development mix (residential, aqua-industry, light industrial, commercial and recreational will attract permanent residents and tourism.
- It will help Velddrif in its quest to become a developed economy.
- Increased accessibility and transport routes should re-determine the town's functionality as a town of passage as well as a tourism and lifestyle destination.
- Infrastructure development should support the expansion of the town, especially in a southern direction closer to the main transport routes.

4.1. Development Proposal 5: Promote industrial uses directly related to the river, estuary and coast as resource

- Land uses, and industrial uses in particular, should directly relate to the river, estuary and coast as resource: The development on the southern bank of the river is instrumental in providing aqua and agri-industrial land and land for secondary economic activities with supporting residential development. Aqua culture should be promoted as part of the ocean economy and land reform.
- Revive the once operational river transport system and strengthen the operations of the fish processing factory. Associated opportunities should be enabled by providing the appropriately zoned land.
- Introduce additional stringent conditions for the provision of commercial and industrial land. Urban design including land use mix and landscaping guidelines (See Addendum A) have to be

a prerequisite. Directives for such guidelines could be found within the urban design guidelines attached, similar to the Thesen Island development.

- Enhancing the sense of place of Velddrif/ Laaiplek will stimulate economic development and in particular in the tourism sector as this is the product Velddrif trades. New development as proposed on the southern bank will increase connectivity (not viewing the river as a natural separation) and stimulate the re-orientation of the town and re-definition of the structural elements, its current limitation, and economic potential. Increased accessibility and transport routes should re-determine the town's functionality as a town of passage as well as a tourism and lifestyle destination (See Map 3).

Map 3: Land uses drawing from the river, estuary and coast as resources

5. Objective 3: Mitigate Climate Change

The principle of **sustainability** answers to aspects such as exposure to source (river and coast) and sensitivity of source. Hence environmental considerations need to be an integral component of any development along the banks of Lower- Berg River. These considerations are necessary if the ecological functioning of the estuarine system is to be maintained or even improved. These measures will serve to protect both existing and future developments on the banks of the Lower Berg River. Thus development and sound environmental management go hand in hand.

Spatial Implications and Guidelines from the Status Quo related to climate change

Likely impacts

- Climate change impacts most likely to occur at Velddrif/ Laaiplek:
  - Decreased water volumes to be considered for future development and growth.
  - Coastal development to be located behind the coastal setback line (PGWC- Development Setback Line) as per Coastal Development Management Act of 2009 considering expected rise in sea level over 30 to 50 years. The Coastal Set Back Line, which is in some cases more restricting than 100m from statutory high water mark, avoid damages due to sea level rises, manage coastal interface and protect low lying areas.
  - Damages to infrastructure due to extreme events i.e. floods, which have an indirect impact on the economy.
  - Urban activities along river and its ecosystems. WCDM and others are registering the Berg River estuary ecosystem as a Special Protected Area. Seven zones to guide boat traffic and water sports to conserve the wetlands (Integrated Estuary Management Plan (IEMP 2010)). Berg River part of West Coast Biosphere Reserve.
  - Cultivation and urban development that encroaches onto sensitive biodiversity areas whilst rehabilitation and conservation of ecosystem functioning is required.
  - Environmental stress caused by pollution (boat oil) and water abstraction (flushing of engines) associated with fishing and speed boats particularly at both Laaiplek - and Pelican harbour.
  - Riparian erosion and damage to birds nest as a result of boating on the river (wake of boats).
  - Decreased Tourism due to risk of encountering extreme events i.e. flooding and extreme heat.
  - Heat-island effect and increased storm water run-off into the wetland as a result of hard and impermeable urban development infrastructure and surfaces.
  - Agricultural crop yield and types and impact on landscape due to changing temperatures and precipitation.
  - Decreased biodiversity through extinction and lack of landscape connectivity to allow for species migrating in the face of climate change.

Proposed Mitigation

Proposed mitigation measures include:

- Application of Bioregional Spatial Planning Categories, the basis for spatial planning, to protect biodiversity and ecosystems should be strictly adhered to.
- Application of the Coastal Set Back lines should be adhere to.
- Development and design criteria catering for the natural processes in the river Estuary have to be adopted.

5.1 Development Proposal 6: Adopt development and design criteria catering for natural processes in the river Estuary.

Mitigate the consequences of climate change and where development is allowed, development and design criteria catering for natural processes in the River Estuary, and described below, have to be adhere to:

Proposal 5.1 Floodplains: The bio-physical function of floodplains is of immense importance as it buffers the force of floods and as floodplains contribute to the biological diversity of estuarine systems. It must therefore be ensured that:

a) the waterways of a marina or any development are designed in a manner which will allow overflows onto the adjacent saltmarsh areas as far as possible;
b) saltmarsh plant communities which are capable of binding soil and preventing erosion, are protected and retained to maximum extent, bearing in mind that no other plant communities are adapted to cope with as wide a range of salinities and periodic inundation by water;
c) Saltmarshes contribution to the biodiversity of estuarine systems and provision of a habitat for a wide variety of life-forms, including reptiles, birds and mammals are supported.

Proposal 5.2 Riverbanks: The configuration of the Lower Berg River has been drastically modified by human intervention and this affects flow velocities, especially under flood conditions and that this, in turn, is a probable reason for disconcerting bank erosion on the outside of meanders, especially upstream of the Carinus Bridge. Guard against any manipulation of the banks of the main flow channel of the Lower Berg River, which can be interpreted as leading to further modification of flow patterns. Hardening (or formalizing) of the riverbank and the construction or enlargement of jetties could alter flow patterns. All possible potential effects of any work on the river bank have to be assess and prior consultation with other owners of river bank properties will be required.

Proposal 5.3 Saltpans: Carefully consider future use of saltpans as they fulfil an important function as roosting places for cormorants and estuarine birds and feeding areas for waders, especially flamingos. On the other, they represent an artificial and unnatural incursion into the floodplains. Ideally one would like to see both functions retained. A possible solution might be to retain saltpans in strategic places as bird refuges and as feeding areas for them, but to rehabilitate most of them for purposes of floodplain rehabilitation.

Proposal 5.4 Canals and Waterways: While there are usually channels capable of carrying water meandering through floodplains, canals and waterways envisaged for development will largely have to be created through dredging and earth-moving. The sediment removed is to be used for the creation of islands on which development can take place. This can be seen as reduction of the already limited floodplain area. However, experience at Thesen Island in Knysna and Port Owen in Velddrif, has shown that marina canals can contribute meaningfully to the water area of an estuarine system (25ha in the case of Thesen Island) and become productive aquatic habitats. Against this background the following criteria need consideration in the design of the development of waterways:

a) It is important that the canals and waterways are designed in a manner which will allow overflow to reach adjacent saltmarsh areas with as little impediment as possible so that the flood buffering function of the floodplain is retained;
b) As floodplain sediments tend to be fluid, stabilization of the canal and waterway walls will need special attention. At Thesen Island this was done successfully using gabion technology. It was found that sessile aquatic life which established itself in the cavities of the stone-fill of the gabions, fulfilled a vital water-filtering action, contributing meaningfully to the water quality in the canals. Application of this experience would seem appropriate for the precinct development. However, the formalization of canal and waterway walls, will inevitably lead to acceleration of flow velocities, which is contrary to the function of floodplains. This underlines again the importance of the adjacent saltmarsh areas in terms of retention of the vitally important floodplain function;
c) As at Thesen Island, it will be important to protect the interstitial gabion biota against pollution if it is to retain its water filtering action. Care will therefore have to be taken during the operational phase to curb run-off of fertilizers, herbicides, pesticides and chemicals from properties into the canals. Similarly storm-water runoff from roads, seepage from sewage systems and discharges from boat motors will have to be rigorously controlled.
d) desiccation of organisms populating the canal and waterway walls during prolonged low-water conditions must be avoided;
e) Surveys to monitor the establishment of benthic life in the canal and waterway bottoms will have to be conducted. It is considered likely that this will have the beneficial effect of extending the range of estuarine biota, as was the case at Thesen Island;
f) infrastructure (roads, services etc.) and buildings on the edges of canal walls, will have to be designed to be elevated either above flood-levels, or to be able to withstand occasional inundation by water;

g) In the same context, provision will have to be made for the security of people and vehicles in the event of sudden or unexpected rises in water levels.

Proposal 5.5 Artificial Islands: Much of what has been stated above for canals and waterways, applies to the artificial islands which will be created:

a) Because of the fluid nature of floodplain sediments, provision will have to be made for their retention on artificially raised islands;
b) provision will have to be made for the protection of infrastructure; services and buildings against high water events;
c) Care will have to be taken in the design of the islands that they are not shaped in a manner which could impede water flows onto the saltmarsh components of the floodplain.

Proposal 5.6 Aquaculture/Fish-farming: Appoint a special task group to give consideration to the aqua-culture/fish-farming facility. Take care to maintain the required water-levels in the ponds and control fluctuations in water salinity. Guard against pollution, either from the road bridge or from other sources.

6. Objective 4: Provide services efficiently and effectively

The **principle of efficiency** deals with servicing developments and how services can be maintained without becoming a burden to taxpayers and Bergrivier Municipality.

Spatial Implications and Guidelines from the Status Quo related to efficient service provision

Private or public services?

There is a general lack of water along the West Coast. To provide for the increased demand for water (average annual demand of 3.53%) a desalination plant should to be approved and established. The lack of water curbed development and efficient provisioning of services is hampered as subdivision of erven is restricted to not smaller than 500m², subject to capacity of existing infrastructure.

Land fill sites: Waste is delivered at Highlands Land fill site outside Malmesbury. There is a waste site at Vredenburg. Being located in a sensitive environment, properly engineered/registered waste disposal facilities that minimise risk of environmental pollution and degradation of surrounding areas are a prerequisite for local sustainability. Groundwater resources have to be protected.

Waste disposal requires to be monitored to enable WCDM to be aware of the final destination of all waste, general, hazardous and healthcare, that is generated within its boundaries.

Energy generation: Use renewable energy to minimize the collective carbon footprint and consider the reliability of alternative energy supplies.

Wind resources on the West Coast are substantial and the region leads with Darling, Hopefield, Gouda and Sere north of Vredendal. Saldanha harbour has sufficient infrastructure and manoeuvrability to facilitate the importing of wind turbines into the West Coast District

The status quo of Ward's 7 infrastructure according to a study conducted in 2016/2017 by Bergrivier Municipality, identified following upgrades required:

- Water sources: 2020 – 2025
- Water Treatment Works: 2020 – 2025
- Water Storage: 2020
- Waste Water Treatment Works: 2020Electricity: 2020

Should service be operated privately?

Given the status quo, the services proposed and considered below formed part of development proposals particularly for the development on the southern banks of the Bergrivier. Alternatives to the conventional services are proposed and these services could be operated privately without additional burden on Bergrivier Municipality.

Storm water

Introduce conventional storm water drainage systems consisting of inlets, underground pipes and open channels to convey storm water run-off. The storm water outfalls will be connected via headwalls with necessary debris traps into the nearest water way or canal.

Final floor levels have to be calculated according to the 50 and 100 year flood lines.

Sewer

Should conventional waterborne sewerage system be used, it is anticipated that a series of pump stations will convey all sewage to a central point where onsite waste water treatment works are located as Velddrif does not have waterborne sewerage across all areas of the town. The waste water will be treated to the required standard of the Local Authority and can be re-used for irrigation and agricultural purposes

No release of treated sewer effluent into the river or sea would be allowed.

As part of the development process the necessary permit application will be submitted to the relevant Authorities.

Water

The town of Velddrif is fed via a bulk water line from the Misverstand Dam. This network is controlled by the District Municipality and has some spare capacity. Any proposed development has to connect to the West Coast District Municipality (WCDM) bulk water supply. Upgrading of the bulk supply lines and reservoir would be required for which developers should have to contribute.

It is proposed to construct a desalination plant or reverse osmosis plant (RO Plant) to convert sea water to potable water to supply water to the proposed developments. The brine can be discharge in the salt mining ponds should these ponds be in close proximity. No release of brine into the sea or river should be allowed.

GLS compiled a report for WCDM and estimated the cost for the bulk water upgrades resulting from the impact of the proposed southern bank development as R9 651 000.00 (excluding P&G, contingencies and VAT). Alternatively the capital that would be required to upgrade external bulk water infrastructure can rather be invested in a RO Plant. This would make proposed development self-sufficient from a water supply side and not put any additional pressure on the existing water supply from the Local Authority.

A reservoir of approximately 3.5 Ml needs to be constructed for balancing the peak flows. Storage for up to 3 days average daily demand would be required.

Electricity

ESKOM will be the Supply Authority. The 11 kV overhead feeder will be upgraded to supply a 2.5 MVA load to accommodate the proposed development i.e. on the southern bank of the Berg River.

A low voltage distribution system will be established for the development. The distribution network will include distribution kiosk and service connections to each erf. Area lighting, road and parking area lighting will be installed according to the Landscape Architect details and requirements.

In the design of the housing units sustainable energy principles will be applied to minimise the total demand on bulk electricity supply.

Waste

Waste will be collected at a central point from where the Local Authority will collect and dispose of it at the closest permitted waste site.

Comparison between private operated development and municipal operated development

A comparison between a private operated development and municipal operated development should be considered by Bergrivier Municipality and find a detailed comparison in **Addendum C**.

The Municipality has to decide whether it is going to take over and maintain the infrastructure as established by the Developer, maintain those facilities and sell water and electricity to the development. Two Options, of which the Municipality has to choose one, have been developed:

OPTION 1: The Municipality takes over full responsibility from the Developer, after the guarantee period.	**OPTION 2: Developer retains ownership and full responsibility for the development**
a) The Developer establishes all infrastructure, inter alia for water reticulation, electricity distribution, roads, sewerage handling and rubbish collection points.	
b) The Developer funds the infrastructure upgrade for the supply of bulk water and bulk electricity.	a) The Developer funds the infrastructure upgrade for the supply of bulk water and bulk electricity proportionally: Only that which is for Vlaminke Vlei.
c) The Developer pays over a capital contribution to the Municipality, as determined by the relevant Acts. d) The Developer negotiates with the Municipality about deductions, from the contribution, inter alia with respect to the establishment of the bulk supply of water and electricity for Cerebos and the Sewerage Package Plant for Vlaminke Vlei. No deductions from the contribution for that part of the capital which is for Vlaminke Vlei, except for the Sewerage Package Plant. e) The Developer has to recover all other cost of the development from the sale of the units. f) The Developer will be responsible for warranty, repairs and upgrades, in the case of underperformance of the infrastructure, for 2 years (if contracted as such). g) The Municipality sells Water and Electricity to the development. h) The Municipality takes over the infrastructure when the Developer's warranty expires.	b) The Developer has to recover all capital cost (to supply the bulk infrastructure) of the development from the sale of the units (houses).
i) The owners/body corporate of Vlaminke Vlei pay their levies and taxes to the Municipality.	c) The owners/body corporate of Vlaminke Vlei pay their levies to the Developer and taxes to the Municipality.

j) The Municipality now has to recover any further cost, of extensions to the bulk supply, the maintenance cost of all infrastructure and the delivery of services, from the levies and rates and taxes.	d) The Body Corporate now has to recover all future cost, of extensions to the bulk supply, the maintenance cost of all infrastructure and the delivery of services, from the levies.
k) The Municipality now has the responsibility to provide the inhabitants of Vlaminke Vlei with the necessary services and support, which include water, electricity, rubbish removal, fire brigade services and sanitation.	e) The Body Corporate now has the responsibility to provide the inhabitants of Vlaminke Vlei with the necessary services and support, which include water, electricity, rubbish removal, fire brigade services and sanitation.
l) The Municipality has the opportunity to use income from this development to cross subsidise lower income housing.	f) The Developer pays no Capital Contribution.

See **Addendum B** (excel spread sheet) for calculations. The values used in this comparison were those published in the reports already produced for this development and, where not available in mentioned reports, found in government publications/guidelines for urban development. The values, thus, are only indicative, but are ball park figures, adequate to support the arguments.

The figures are only for Vlaminke Vlei. In reality one should, presumably, also, simultaneously, provide for the Cerebos development. The reservoir capacity of 1.5Ml is only for Vlaminke Vlei, while the pipeline is for both Vlaminke Vlei and Cerebos.

6.1. Development Proposal 7: Provide municipal controlled services

The best option, as shown, and assuming that the figures used are near enough to reality, is **OPTION** The most important aspects of option 1 are the following:

1. The Municipality takes control of the development, which is within the greater municipal borders, and, as soon as the amendment of the SDF is finalised, will be within the urban edge.
2. The risk of having a development on its doorstep, which cannot supply in its own requirements, will not be a threat.
3. Income, from the selling of Water and Electricity and the collection of levies, can be generated for the Municipality, which may be utilised for cross subsidising of the lower income developments.
4. The bulk supply infrastructure, for the supply of water and electricity, for the planned Cerebos development, can be put in place simultaneously.

5. It is important that the Developer pays the full contribution, after the cost of the Cerebos share of the bulk supply infrastructure and the Sewerage Package Plant, put in place by the Developer, has been subtracted.
6. The tempo of sales will dictate infrastructure development, which should be phased, to limit exposure to the maintenance of unsold erven.
7. The Sewerage Package Plant will save the Municipality the trouble of having to provide for the sewage of Vlaminke Vlei.
8. The slow uptake of erven may put pressure on unrecovered maintenance cost, but this can be financed out of the contribution.
9. See **Addendum C** (excel spread sheet) for calculations. The cost of maintenance is estimated in the Cost of Maintenance table.
10. The Developer should support a warranty to the Municipality/Body Corporate, on all infrastructure in the development and those established for the bulk supply, for, say, 2 years.

7. Legislative compliance

The table to follow contains the comparison with the Bergrivier SDF 2012 – 2917 strategies:

Strategy	Compliance of proposal
a) Support growth in areas with economic potential	Velddrif is one of the fastest growing (developing) settlements in the West Coast
b) Grow and diversify agricultural markets and products	Proposal includes establishing aquaculture and related activities.
c) Support sustainable mining	Proposal includes exiting salt mining.
d) Strengthen rural tourism	Commercial component and maximizing the use of the river as sources should strengthen tourism.
e) Regulate development according to bioregional planning initiatives	Development done in line with bio regional planning criteria.
f) Conserve and strengthen cultural and heritage landscape.	As a result of proposed amendment, generate guidelines for development along the river edge and estuary (and upstream).
g) Protect and strengthen visual agricultural landscape	Proposal only west of R27 and balance is kept as is to protect a sense of openness.
h) Protect water sources and catchment.	Guidelines for development within estuaries are recommended
i) Protect food security	Production of food (aqua culture) forms part of process
j) Provide housing	Different housing topologies are provided.

k) Identify viable land reform opportunities	HDSAs will obtain opportunities to be involved in primary economy.
l) Provide and support sustainable rural infrastructure and service	All services could be provided by developer and development could exist off – the grid.

The table to follow contains the comparison with the West Coast District SDF and IDP vision and strategies:

Strategy	Compliance of proposal
Vision: To Promote Sustainable Development, prioritise development in highest growth potential areas, encourage and facilitate development along the key corridors within the West Coast District.	Velddrif has medium growth potential (10 – 20 000 people) and is a sub-regional node. The proposed development intends to strengthen its growth potential by providing for commercial and industrial land and mixed use i.e. industrial and tourism to ensure economic growth.
GOAL 1: GROWTH & DEVELOPMENT OPPORTUNITIES IN KEY SECTORS/LOCATIONS. • SDO1: Align the future settlement patterns of the WCDM with areas of real/proven economic potential and the location of environmental resources. • SDO2: Deliver human development programs and basic needs programs wherever they are required. • SDO3: Align future development along development routes in selected rural areas.	SDO1: Urban design guidelines protect the environmental resources (estuary), whilst the need to increase the public opportunity to access the water resources is addressed. SDO2: Employment opportunities created by the proposed industrial and commercial (tertiary economic) development will enhance skills development. SDO3: Velddrif is on a development route (R27 and R399), earmarked as a freight route (See map below).
IDP vision A quality destination of choice through an open opportunity society. To promote sustainable development, prioritise development in key growth and investment locations, and encourage and facilitate development along the key corridors.	The proposal enables development in key growth and investment locations and creates a quality destination which would be visited by tourist. Land use proposal should clearly state the industrial commercial land use mix it proposes together with urban design guidelines to enhance tourism.
Support major regional growth centre	Velddrif is in close proximity to the IDZ and the proposed development will support alternative but supportive living and working options. Vredenburg and Saldanha, where the IDZ is located, are the major regional

	growth centres.
Promote tourism_ coastal towns	The proposed development will attract tourism and build on the proposal made in the VLPP
Attend to climate change & sea-level rise in estuaries	The urban design guidelines considered climate change and sea-level rise.
GOAL 2: AREAS THAT NEED TO BE PROTECTED. • SDO4: Promote sustainable utilisation of the District's natural resource base to extract economic development opportunities.	The proposed development goes hand in hand with conservation and stewardship, ensuring that the district's resources, and particular its natural resource (the estuary) is utilized sustainably.

8. Recommendation

The adaptation of the Spatial Development Framework is a requirement of SPLUMA and LUPA, to facilitate the amendment of the BSDF.

It is recommended that this SDF report is adopted as an addition to the existing BSDF and the VLPP. It will constitute the proposed amendment of the development footprint of Velddrif. The recommendations include:

The amendment (underlined section added) of the vision statement of Velddrif to read:

A vibrant, well managed and attractive Velddrif and Laaiplek which offers safe, integrated open spaces, streets and amenities, where the unique landscape, cultural and social assets, <u>its proximity to the IDZ, location within a functional growth potential area and the West Coast Biosphere</u> create opportunities for residents and attract tourists.

To reach the vision, the development of Vlaminke Vlei is proposed, as the development of the southern bank of the Berg River will achieve the four proposed objectives. Hence, the following development proposals for Vlaminke Vlei should be considered:

Objective 1: Grow the economy of Velddrif and Laaiplek

Development Proposal 1: *Exploit accessibility and proximity and capitalise on the Bay of Saldanha as a growth node*

Development Proposal 2: *Provide for zoned land* to change the economic status of Velddrif

Development Proposal 3: Exploit tourism and promote land uses directly related to the river, estuary and coast as resource

Development Proposal 4: *Use locational directives to guide mixed land use in existing and proposed developments.*

Objective 2: Protect the Sense of Place

Development Proposal 5: *Promote industrial uses directly related to the river, estuary and coast as resource*

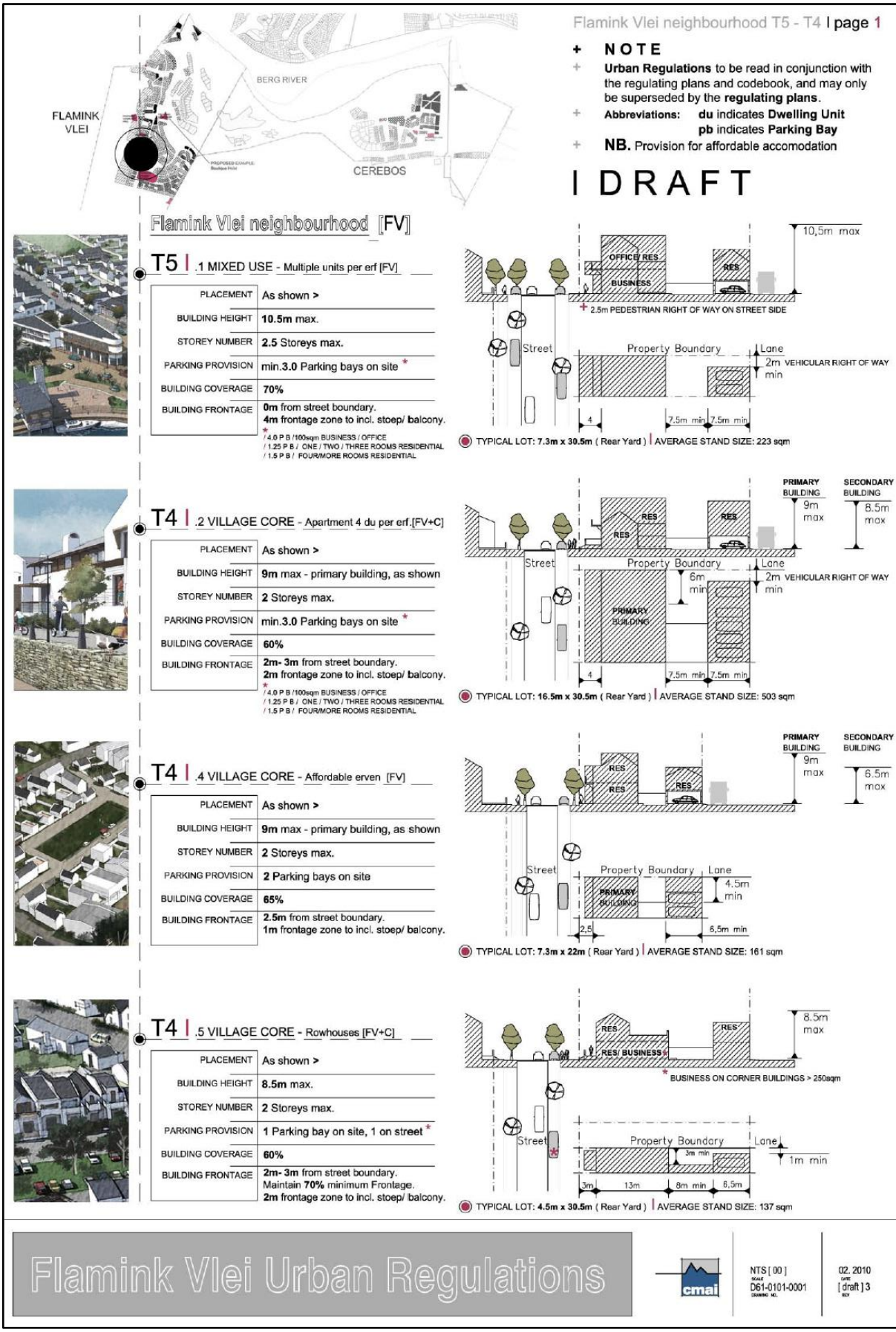
Objective 3: Mitigate Climate Change

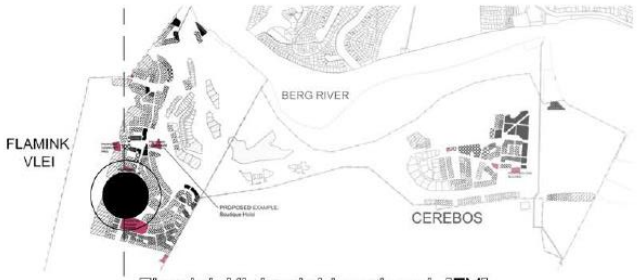
Development Proposal 5: *Adopt development and design criteria catering for natural processes in the river Estuary:*
Floodplains,
Riverbanks,
Saltpans,
Canals and Waterways,
Artificial Islands and
Aquaculture/Fish-farming

Objective 4: Provide services efficiently and effectively

Development Proposal 6: *Provide municipal controlled services.*

ADDENDUM A: URBAN REGULATIONS





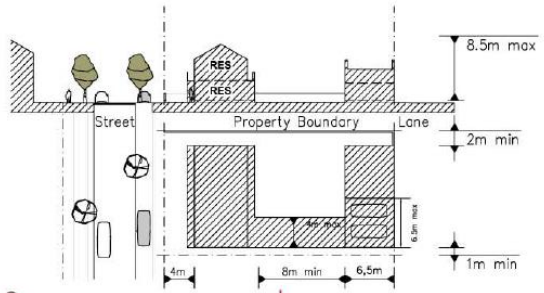
+ **NOTE**
+ **Urban Regulations** to be read in conjunction with the regulating plans and codebook, and may only be superseded by the **regulating plans**.
+ **Abbreviations:** **du** indicates **Dwelling Unit**
  pb indicates **Parking Bay**
+ **NB.** Provision for affordable accomodation

I DRAFT

Flamink Vlei neighbourhood [FV]

T3 I .1 SUB URBAN [FV+C]

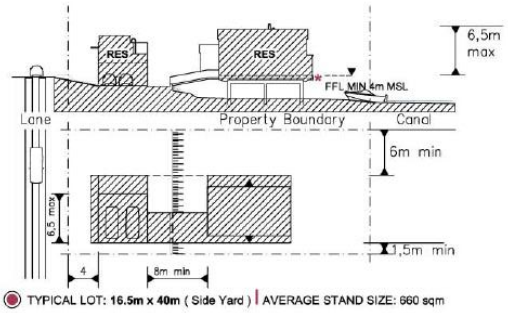
PLACEMENT	As shown >
BUILDING HEIGHT	**8.5m** max.
STOREY NUMBER	**2** Storeys max.
PARKING PROVISION	**2** Parking bays on site
BUILDING COVERAGE	**50%**
BUILDING FRONTAGE	**2m- 4m** from street boundary. **1m** frontage zone to incl. stoep/ balcony.



TYPICAL LOT: **16.5m x 30,5m** (Court Yard) I AVERAGE STAND SIZE: 503 sqm

T2 I .2 STILT HOUSES [FV]

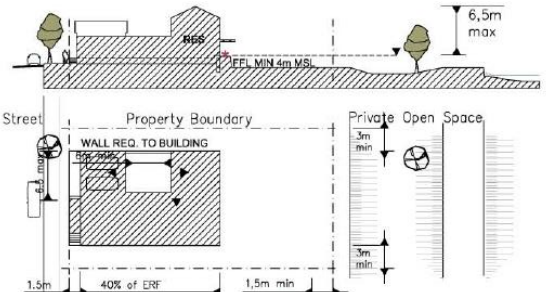
PLACEMENT	As shown >
BUILDING HEIGHT	**6.5m** max.
STOREY NUMBER	**1.5** Storeys max.
PARKING PROVISION	**2** Parking bays on site
BUILDING COVERAGE	**45% (and limited to 900sqm)**
BUILDING FRONTAGE	**2m- 4m** from street boundary. **1m** frontage zone to incl. stoep/ balcony.



TYPICAL LOT: **16.5m x 40m** (Side Yard) I AVERAGE STAND SIZE: 660 sqm

T2 I .3 AQUA VILLA

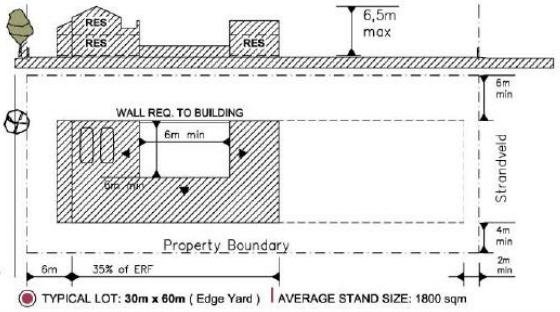
PLACEMENT	As shown >
BUILDING HEIGHT	**6,5m** max.
STOREY NUMBER	**1.5** Storey max.
PARKING PROVISION	**2** Parking bays off site
BUILDING COVERAGE	**40%** of Buildable area
BUILDING FRONTAGE	**1.5m** from street boundary. **2m** frontage zone to incl. stoep/ balcony.



TYPICAL LOT: **18.5m x 35m** (Edge/Court Yard) I AVERAGE STAND SIZE: 648 sqm

T2 I .1 FARM VILLA STANDS

PLACEMENT	As shown >
BUILDING HEIGHT	**6,5m** max.
STOREY NUMBER	**1.5** Storey max.
PARKING PROVISION	**2** Parking bays on site
BUILDING COVERAGE	**35%** of Buildable area
BUILDING FRONTAGE	**6m** from street boundary. **2m** frontage zone to incl. stoep/ balcony.



TYPICAL LOT: **30m x 60m** (Edge Yard) I AVERAGE STAND SIZE: 1800 sqm

Flamink Vlei Urban Regulations

cmai

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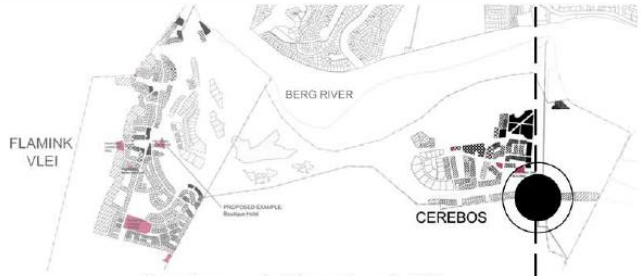


+ **NOTE**

+ **Urban Regulations** to be read in conjunction with the regulating plans and codebook, and may only be superseded by the **regulating plans**.

+ **Abbreviations:** **du** indicates **Dwelling Unit**
pb indicates **Parking Bay**

+ **NB.** Provision for affordable accomodation

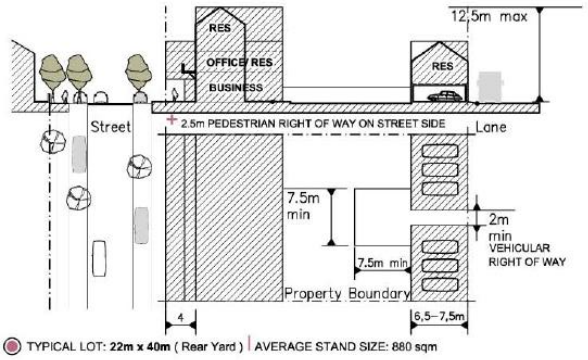
I DRAFT

Cerebos neighbourhood [C]

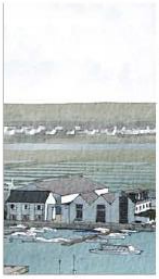
T5 | .1 MIXED USE - Multiple units per erf [FV+C]

PLACEMENT	As shown >
BUILDING HEIGHT	**12.5m** max.
STOREY NUMBER	**3** Storeys max.
PARKING PROVISION	min.**3.0** Parking bays on site *
BUILDING COVERAGE	**70%**
BUILDING FRONTAGE	**0m** from street boundary. **4m** frontage zone to incl. stoep/ balcony.

* / 4.0 P B /100sqm BUSINESS / OFFICE
/ 1.25 P B / ONE / TWO / THREE ROOMS RESIDENTIAL
/ 1.5 P B / FOUR/MORE ROOMS RESIDENTIAL



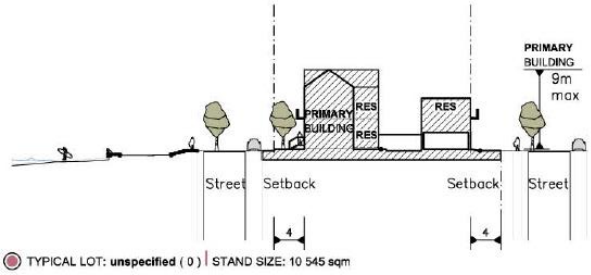
TYPICAL LOT: **22m x 40m** (Rear Yard) | AVERAGE STAND SIZE: 880 sqm



T4 | .1 VILLAGE CORE - apartment 55 du per ha. [C]

PLACEMENT	As shown >
BUILDING HEIGHT	**10.5m** max, as shown
STOREY NUMBER	**3** Storeys max.
PARKING PROVISION	min.**1.5** Parking bays per unit *
BUILDING COVERAGE	**50%**
BUILDING FRONTAGE	**2m- 4m** from street boundary. **2m-4m** frontage zone to incl. stoep/ balcony.

* / 4.0 P B /100sqm BUSINESS / OFFICE
/ 1.25 P B / ONE / TWO / THREE ROOMS RESIDENTIAL
/ 1.5 P B / FOUR/MORE ROOMS RESIDENTIAL

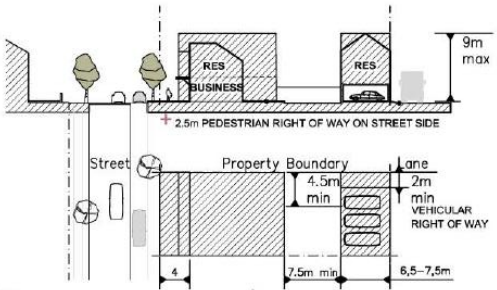


TYPICAL LOT: **unspecified** (0) | STAND SIZE: 10 545 sqm

T4 | .3 VILLAGE CORE - Livework units [FV+C]

PLACEMENT	As shown >
BUILDING HEIGHT	**9m** max.
STOREY NUMBER	**2 .5** Storeys max.
PARKING PROVISION	**3 min.** Parking bay on site *
BUILDING COVERAGE	**70%**
BUILDING FRONTAGE	**0m** from street boundary. **4m** frontage zone to incl. stoep/ balcony.

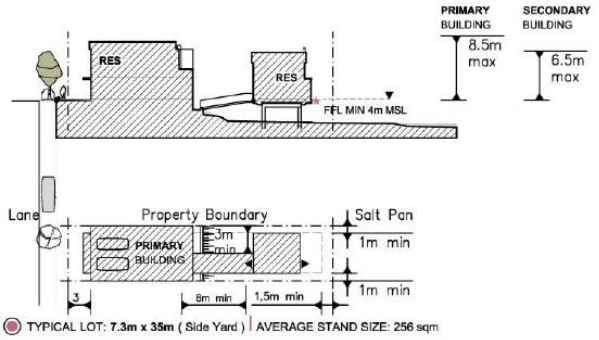
* / 4.0 P B /100sqm BUSINESS / OFFICE
/ 1.25 P B / ONE / TWO / THREE ROOMS RESIDENTIAL
/ 1.5 P B / FOUR/MORE ROOMS RESIDENTIAL



TYPICAL LOT: **11m x 30.5m** (Rear Yard) | AVERAGE STAND SIZE: 336sqm

T4 | .5 VILLAGE CORE - Stilt Rowhouse [C*]

PLACEMENT	As shown >
BUILDING HEIGHT	**8.5m** - primary building, as shown
STOREY NUMBER	**2** Storeys max.
PARKING PROVISION	**2** Parking bays on site
BUILDING COVERAGE	**45%**
BUILDING FRONTAGE	**2m- 4m** from street boundary. **1m** frontage zone to incl. stoep/ balcony.



TYPICAL LOT: **7.3m x 35m** (Side Yard) | AVERAGE STAND SIZE: 256 sqm

Flamink Vlei Urban Regulations

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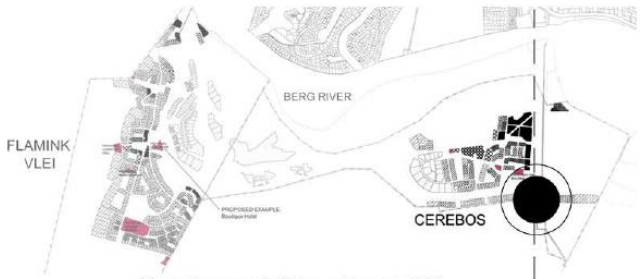


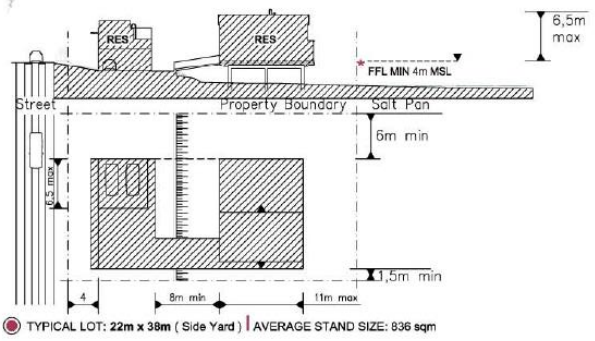
+ **NOTE**
+ **Urban Regulations** to be read in conjunction with the regulating plans and codebook, and may only be superseded by the **regulating plans**.
+ **Abbreviations:** **du** indicates **Dwelling Unit**
pb indicates **Parking Bay**
+ **NB.** Provision for affordable accomodation

I DRAFT

Cerebos neighbourhood [C]

T3 I .2 SUB URBAN - Stilt houses [C]

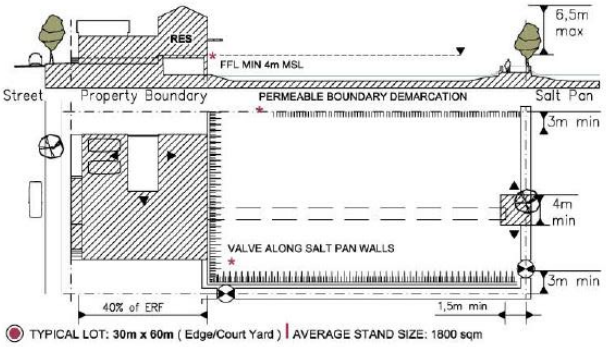
PLACEMENT	As shown >
BUILDING HEIGHT	**6.5m** max.
STOREY NUMBER	**2** Storeys max.
PARKING PROVISION	**2** Parking bays on site
BUILDING COVERAGE	**45%**
BUILDING FRONTAGE	**2m- 4m** from street boundary. **1m** frontage zone to incl. stoep/ balcony.



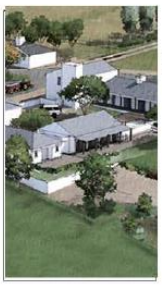
TYPICAL LOT: **22m x 38m** (Side Yard) I AVERAGE STAND SIZE: 836 sqm

T2 I .3 AQUA VILLA [C]

PLACEMENT	As shown >
BUILDING HEIGHT	**6,5m** max.
STOREY NUMBER	**1.5** Storey max.
PARKING PROVISION	**2** Parking bays on site
BUILDING COVERAGE	**40%** of Buildable area
BUILDING FRONTAGE	**1.5m** from street boundary. **2m** frontage zone to incl. stoep/ balcony.

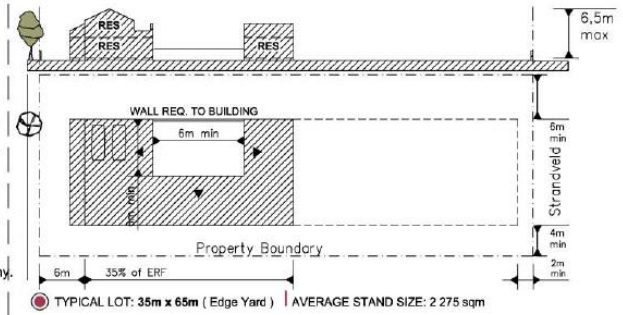


TYPICAL LOT: **30m x 60m** (Edge/Court Yard) I AVERAGE STAND SIZE: 1800 sqm



T2 I .1 FARM VILLA STANDS [C]

PLACEMENT	As shown >
BUILDING HEIGHT	**6,5m** max.
STOREY NUMBER	**1.5** Storey max.
PARKING PROVISION	**2** Parking bays on site
BUILDING COVERAGE	**35%** of Buildable area
BUILDING FRONTAGE	**6m** from street boundary. **2m** frontage zone to incl. stoep/ balcony.



TYPICAL LOT: **35m x 65m** (Edge Yard) I AVERAGE STAND SIZE: 2 275 sqm

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D61-0101-0001 DRAWING NO.

02. 2010 DATE
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PLANTING REGULATIONS

OBJECTIVE IN REGULATIONS

1. Conservation of existing and valuable vegetation communities including the Saldanha Flats Strandveld and the intertidal and supratidal salt marsh which is located on the embankments of the Berg River.

2. Rehabilitation, as defined by legislation, "restoring an area, not to its previous condition, but to a functional or proper condition, which condition needs to comply with the requirements of sustainable development", of the appropriate natural vegetation types.

3. Enhancement of the biodiversity and specific character of the site through appropriate plant species selection.

Appropriate plant species selection to be determined by the historically naturally occurring vegetation type specific to the site in question. i.e. Strandveld species to be planted where in the past strandveld would have occured and marsh vegetation bordering aquatic areas etc

For each naturally occurring vegetation type, a suggested list of indigenous plants to be compiled from the existing inventory produced by the vegetation specialist. This list will be supplemented with locally indigenous and regionally appropriate indigenous species.

An on site nursery will be established to propagate plant material from the existing indigenous vegetation.

Residential properties:
Where appropriate, variation in plant species selection and canopy height is encouraged.

Use of invasive or noxious plant species is prohibited.

Irrigation and fertilisation or soil amendments to be reviewed.

Retention or removal of topsoil to be reviewed.

Size and scope of constructed garden elements such as braai areas to be regulated and reviewed.

LANDSCAPE CHARACTER

Narrow water canals will criss cross the development in streets planted with indigenous, low water use species. Pedestrian, cyclist and motorist share priority of use.

At the heart of each neighbourhood unit is a public open space – a green, square, plaza or boulevard, each of which has a distinct character.

There is a linear green space bordering the beach to further accommodate recreational activity.

On the West Coast where wind is a major climatic consideration built form will be regulated to create sheltered external spaces to optimise outdoor living.

LANDSCAPE GUIDELINES

PROPOSED DEVELOPMENT

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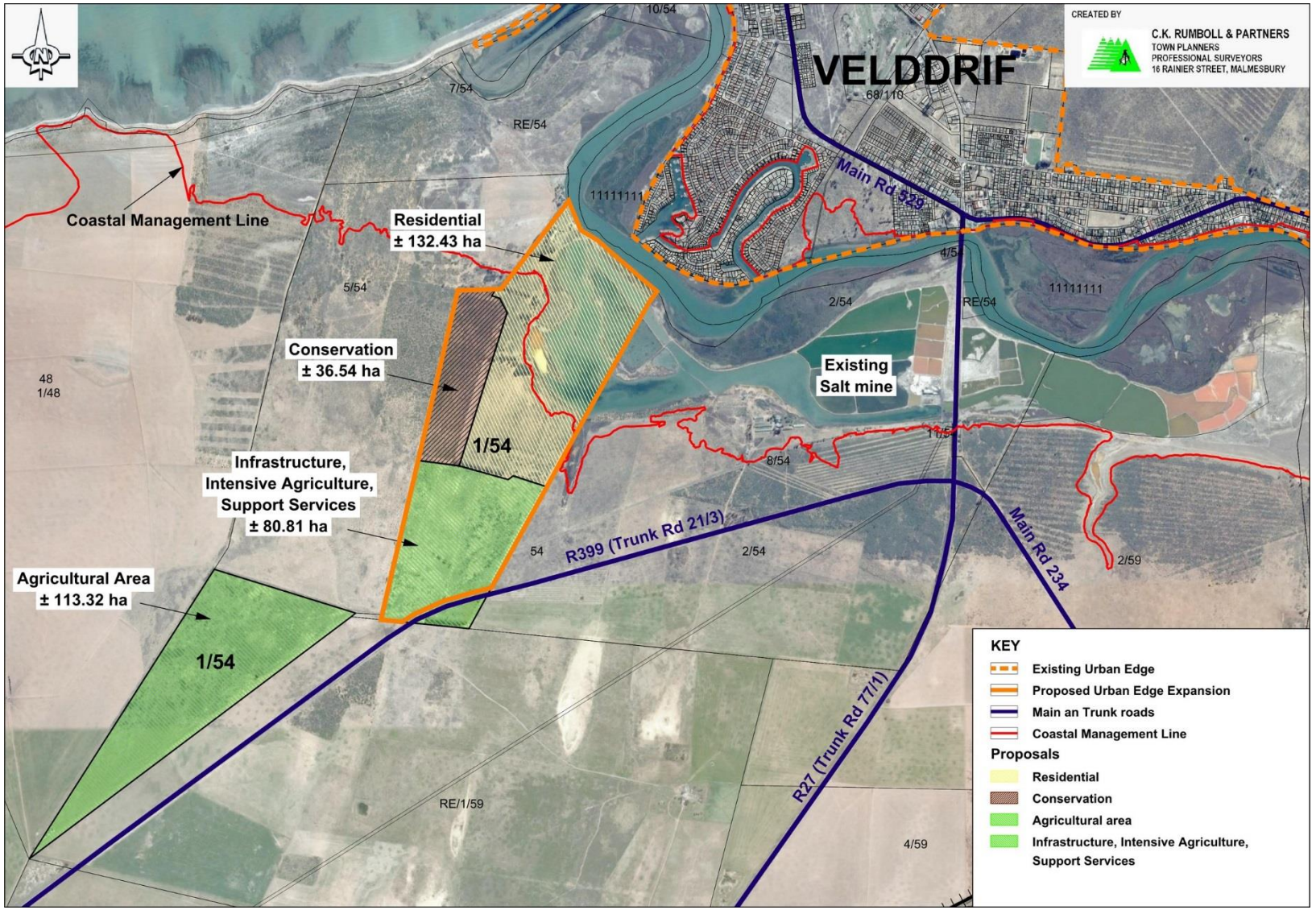
ADDENDUM B: MAPS



Proposed urban edge expansion – southern bank of Berg River

Land uses drawing from the river, estuary and coast as resources

Illustration of location driving land use mix