

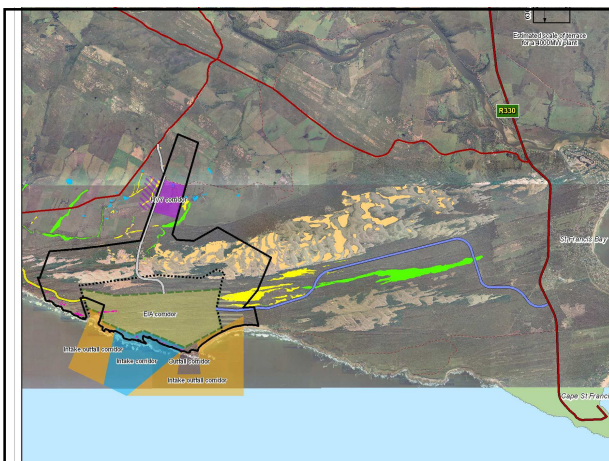
## Implications of the proposed Nuclear-1 development

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- Impacts associated with the **development platforms** (HV yard and Nuclear plant)
- Impacts related to **infrastructure**

[Major impacts highlighted only]

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## Major impacts that would be associated with the **development platforms**

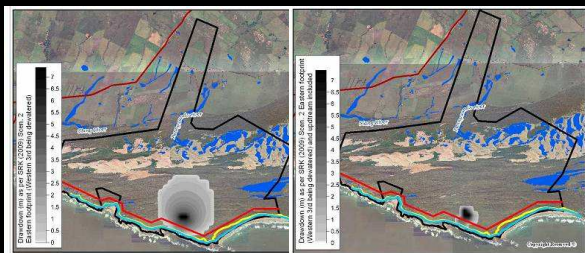
- Impacts associated with dewatering
- Impacts associated with transport and storage of spoil
- Impacts associated with increased disturbance at a site level

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## Dewatering impacts:

Modelled draw-down scenarios (after SRK 2009)

Impact would affect coastal seeps and potentially the Langefonteinvlei



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## Additional information needed to inform mitigation design for addressing draw-down impacts

- Quantification of wetland hydrology to establish critical wetland / groundwater thresholds
- Refinement of drawdown model based on accurate location options and sizing of the selected Nuclear-1
- Use of membrane or other technology to reduce draw-down effect

Monitoring programme currently underway to inform these issues

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## Mitigation measures would include:

- Establishment of effective setback areas that take cognisance of surface and subsurface processes, based on new data
- Design of measures to allow artificial recharge of remnant coastal seeps

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## Options for the transport and storage of spoil

- Transport of spoil over mobile dune associated with high, largely unmitigable impacts:
  - Disturbance and degradation of wetlands and associated dune systems
- Transport to St Francis Bay as piped slurry potentially mitigable
- Marine disposal

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## Major impacts that would be associated with infrastructure

- Impacts associated with transmission lines (within the site)
- Impacts associated with access roads (within and to the site)

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## Impacts associated with the proposed transmission lines

- East-west physical fragmentation of interconnected terrestrial / wetland ecosystems
- Localised disturbance during construction
- Persistent degradation resulting from maintenance roads

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## Mitigation against transmission line impacts

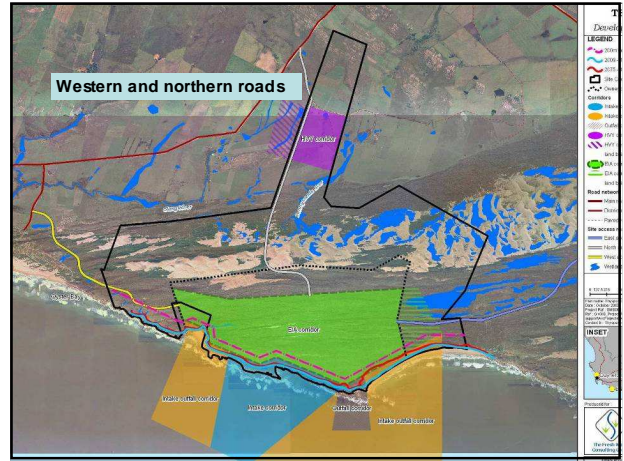
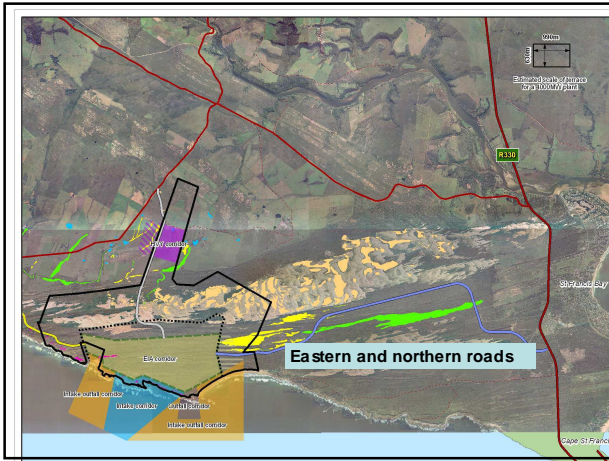
- Partial re-alignment
- Selection of least impacting pylon configurations
- No maintenance roads through mobile dunes

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## Impacts associated with the proposed access routes

- 3 routes initially assessed
- Mitigation measures generally need to address:
  - Fragmentation at the level of the dune system and the site
  - Hydrological connectivity and impacts
  - Changes in flow patterns within and between wetlands
  - Degradation through ongoing disturbance
  - Changes in dune dynamics (????)

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### Mitigation against impacts associated with access roads

- Northern road not recommended - (EIR concurs)
- Eastern and Western access routes
  - re-align to avoid seeps and coastal forest pockets
  - bridge wetlands

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### Despite mitigation measures...

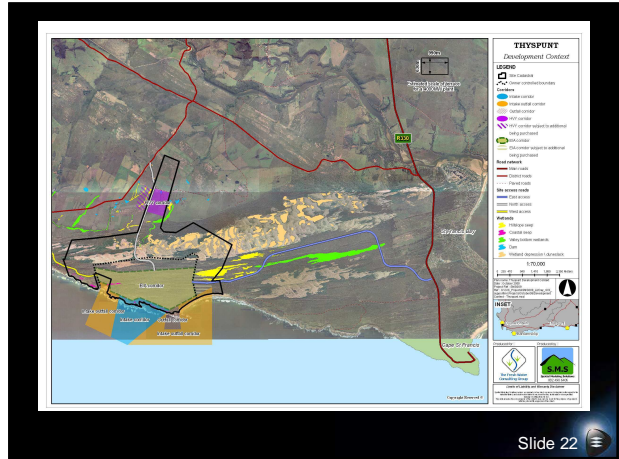
- Cumulative impacts likely to result in long-term degradation of presently unimpacted wetland ecosystems, and loss of an unquantified area of coastal seeps
- **Assessed as of high negative significance**

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## Mitigation against cumulative impacts

- Establishment of the present site as a conservation area, outside of construction platforms
- Trust fund to assure long term conservation beyond the life-span of the Nuclear-1 development
- No additional development phases
- Expansion of the conservation area to include all erven along the proposed eastern road, thus greatly extending the conserved and actively managed area of mobile dune and wetland mosaic  
This measure would only be effective if implemented in the short-term, before further development of the system to the east of the site takes place.

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Overall assessment: still negative

### BUT

Given increased confidence in mitigation efficacy that assures conservation of:  
duneslack wetlands  
the Langefontein systems  
reduced impacts to coastal seeps

PLUS conservation of extended dunefield and eastern valley bottom wetlands

### Concluded:

Development of Nuclear-1 could have positive significance compared to the likely outcome of a "no development" alternative

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## BUT

Confidence in mitigation measures needs to be increased:

– Quantification of surface / groundwater interactions and thresholds in the Langefonteinvlei

– Refinement of the draw-down model

(current monitoring programme addressing these information gaps)

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The End

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