

SECTION F: APPENDICES

Draft Basic Assessment Report for the Proposed Port Nolloth Lighthouse –
near Port Nolloth, Northern Cape

APPENDIX F: Impact Assessment

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Alternative A (Preferred Alternative) – Construction Phase Direct, Indirect and Cumulative Impacts

Activity	Impact Description	Spatial Extent	Intensity	Duration	Reversibility	Irreplaceability	Probability	Confidence	Significance and Status	Significance and Status
									Without Mitigation	With Mitigation
CONSTRUCTION PHASE – DIRECT IMPACTS										
Site clearing for the proposed lighthouse – including the demolitions of: <ul style="list-style-type: none"> ➤ Lean-to structure on ERF 335; and ➤ Existing Aluminium Lattice Lighthouse on ERF 44. 	Loss of archaeological heritage resources – lean-to structure older than 60 years.	Local	Low	Permanent	High	High	High	High	Medium Negative	Low Positive
	Runoff and erosion – once lay down area is cleared in preparation for excavations of foundation area.	Site specific	Low	Short term	High	Low	Low	Medium	Low Negative	Low Negative
	Waste – domestic waste, demolishing waste and hazardous waste (incl. concrete rubble, metal, sewage and corrugated asbestos sheeting).	Site specific	Medium	Short term	High	Medium	High	Medium	Medium Negative	Low Negative
	Soil contamination - through diesel, petrol and contaminant spills from construction vehicles/equipment.	Site specific	Medium	Short term	Medium	Medium	Medium	Medium	Medium Negative	Low Negative
	Air quality – dust production and pollution from construction equipment and vehicles.	Local	Medium	Short term	Low	High	High	Medium	Medium Negative	Low Negative
	Noise – as a result of	Local	High –	Short term	High	High	High	Medium	Medium	Low

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Activity	Impact Description	Spatial Extent	Intensity	Duration	Reversibility	Irreplaceability	Probability	Confidence	Significance and Status	Significance and Status	
	diesel powered equipment such as the generators used for powering equipment and activities associated with the hauling of construction trucks.		for sensitive receptors close to site						Negative	Negative	
	Job creation – through employment and business opportunities.	Regional	Medium	Short term	Not applicable	Not applicable	High	High	Low Positive	Medium Positive	
	CONSTRUCTION PHASE – INDIRECT IMPACTS										
	Public safety – impacts on public safety especially due to increased construction vehicles.	Local	Medium	Short term	Not applicable	Not applicable	Medium	Low	Medium Negative	Low Negative	
	Secondary benefits to community – through accommodation for construction workers, transport of workers to and from the site, and support services such as concrete and building material suppliers.	Regional	High	Short term	Not applicable	Not applicable	High	Low	Medium Positive	High Positive	
	Road damage – through movement of construction vehicles.	Regional	Medium	Permanent	High	Low	Medium	Medium	Medium Negative	Low Negative	
CONSTRUCTION PHASE – CUMULATIVE IMPACTS											

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Activity	Impact Description	Spatial Extent	Intensity	Duration	Reversibility	Irreplaceability	Probability	Confidence	Significance and Status	Significance and Status
	Job creation – increased job opportunities through the development acting in conjunction with other developments in the area.	Regional	Low	Short term	Not applicable	Not applicable	High	High	Low Positive	Low Positive
	Air quality – dust and air pollution from construction activities in conjunction with other activities/vehicles in the vicinity.	Regional	Medium	Short term	Low	High	High	Low	Medium Negative	Low Negative
	Waste – increased waste material on site and at landfills.	Regional	Medium	Short term	Medium	Medium	High	Medium	Medium Negative	Low Negative
Excavations for:	CONSTRUCTION PHASE – DIRECT IMPACTS									
<ul style="list-style-type: none"> ➤ Lighthouse foundation; and ➤ A 220 V underground cable extending from the engine room on ERF 45 to the proposed lighthouse on ERF 335. 	Loss of archaeological heritage resources – through destruction, disturbance or sealing-in of palaeontological/archaeological occurrences exposed on the ground or buried beneath the surface during excavations.	Site specific	Low	Permanent	High	Low	Low	High	Low Negative	Low Negative
	Runoff and erosion – through excavations and soil stockpiles.	Site specific	Medium	Short term	High	Low	Low	Medium	Medium Negative	Low Negative

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Activity	Impact Description	Spatial Extent	Intensity	Duration	Reversibility	Irreplaceability	Probability	Confidence	Significance and Status	Significance and Status
	Waste – domestic waste and sewage from temporary construction toilets.	Site specific	Medium	Short term	High	Medium	High	Medium	Medium Negative	Low Negative
	Soil contamination – possible soil contamination during excavation activities through diesel, petrol and contaminant spills from construction vehicles/equipment.	Site specific	Medium	Short term	Medium	Medium	High	Medium	Medium Negative	Low Negative
	Air quality – dust production and pollution from construction equipment and vehicles during excavations.	Local	Medium	Short term	Low	High	High	Medium	Medium Negative	Low Negative
	Noise – through diesel powered equipment such as the generators used for powering equipment and activities associated with the hauling of construction trucks.	Local	High – for sensitive receptors close to site	Short term	High	High	High	Medium	Medium Negative	Low Negative
	Road damage – through excavation activities on Beach Road for the underground 220 V cable.	Site specific to local	Medium	Permanent	High	Low	Medium	Medium	High Negative	Low Negative
CONSTRUCTION PHASE – INDIRECT IMPACTS										

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Activity	Impact Description	Spatial Extent	Intensity	Duration	Reversibility	Irreplaceability	Probability	Confidence	Significance and Status	Significance and Status	
	Road damage – due to construction vehicle movement.	Regional	Medium	Permanent	High	Low	Medium	Medium	Medium Negative	Low Negative	
	CONSTRUCTION PHASE – CUMULATIVE IMPACTS										
	Air quality – dust and air pollution from construction activities in conjunction with other activities/vehicles in the vicinity.	Regional	Medium	Short term	Low	High	High	Low	Medium Negative	Low Negative	
Construction of concrete lighthouse tower, lantern house, underground cabling and commissioning.	CONSTRUCTION PHASE – DIRECT IMPACTS										
	Noise – due to diesel powered equipment such as the generators used for powering equipment and activities associated with the hauling of construction trucks.	Local	High – for sensitive receptors close to site	Short term	High	High	High	Medium	Medium Negative	Low Negative	
	Visual – through construction operations and equipment and vehicles which could pose a visual intrusion on existing views of sensitive visual receptors in the region.	Local	High – for sensitive receptors close to site	Short term	High	Low	High	High	Medium Negative	Low Negative	
	Air quality – reduction in local air quality through dust production and pollution from	Local	Medium	Short term	Low	High	High	Medium	Medium Negative	Low Negative	

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Activity	Impact Description	Spatial Extent	Intensity	Duration	Reversibility	Irreplaceability	Probability	Confidence	Significance and Status	Significance and Status
	construction equipment and vehicles during placement of the tower.									
	CONSTRUCTION PHASE – INDIRECT IMPACTS									
	Road damage – due to construction vehicle movement.	Regional	Medium	Permanent	High	Low	Medium	Medium	Medium Negative	Low Negative
	CONSTRUCTION PHASE – CUMULATIVE IMPACTS									
	Air quality – dust and air pollution from construction activities in conjunction with other activities/vehicles in the vicinity.	Regional	Medium	Short term	Low	High	High	Low	Medium Negative	Low Negative

Alternative A (Preferred Alternative) – Operational Phase Direct, Indirect and Cumulative Impacts

Activity	Impact Description	Spatial Extent	Intensity	Duration	Reversibility	Irreplaceability	Probability	Confidence	Significance and Status	Significance and Status
									Without Mitigation	With Mitigation
Operation of lighthouse.	OPERATIONAL PHASE – DIRECT IMPACTS									
	Visual – Intrusion of a concrete lighthouse on views of sensitive visual receptors and the nightscape of the region.	Local	Medium	Permanent	High	Medium	High	High	Medium Negative	Medium Negative
	Economics – the operation of the lighthouse will provide	Site specific	Low	Permanent	Not applicable	Not applicable	High	High	Low Positive	Low Positive

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Activity	Impact Description	Spatial Extent	Intensity	Duration	Reversibility	Irreplaceability	Probability	Confidence	Significance and Status	Significance and Status	
	one permanent post.										
	Secondary effects – through (i) future development of Port activities, and (ii) improved safety for mariners.	Local	High	Permanent	Not applicable	Not applicable	High	Medium	High Positive	High Positive	
	OPERATIONAL PHASE – INDIRECT IMPACTS										
	The new tower will be aesthetically pleasing and will add to the country's rich lighthouse heritage.	Local to Regional	High	Permanent	High	Low	Medium	Medium	Medium Positive	High Positive	
	OPERATIONAL PHASE – CUMULATIVE IMPACTS										
	None.	-	-	-	-	-	-	-	-	-	-
Use of vehicle during maintenance of lighthouse.	OPERATIONAL PHASE – DIRECT IMPACTS										
	Health and Safety – due to maintenance work required at high heights with specialised equipment.	Site specific	Medium	Short term	High	Medium	High	Medium	Medium Negative	Low Negative	
	OPERATIONAL PHASE – INDIRECT IMPACTS										
	Road damage – through use of maintenance vehicles.	Local	Low	Short term	High	Low	Medium	Medium	Low Negative	Low Negative	
	OPERATIONAL PHASE – CUMULATIVE IMPACTS										
None.	-	-	-	-	-	-	-	-	-	-	

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Alternative A (Preferred Alternative) – Decommissioning Phase Direct, Indirect and Cumulative Impacts:

Activity	Impact Description	Spatial Extent	Intensity	Duration	Reversibility	Irreplaceability	Probability	Confidence	Significance and Status	Significance and Status
									Without Mitigation	With Mitigation
DECOMMISSIONING PHASE – DIRECT IMPACTS										
Disassemble lighthouse according to regulatory requirements.	Job creation – creation of employment for all decommissioning activities e.g. demolitions.	Regional	Medium	Short term	High	Medium	High	High	Low Positive	Medium Positive
	Waste – domestic and demolishing waste including sewage from temporary toilets.	Site specific	Medium	Short term	High	Medium	High	Medium	Medium Negative	Low Negative
	Noise – noise impacts as a result of diesel powered equipment such as the generators used for powering equipment and activities associated with the operation of construction vehicles required for decommissioning activities.	Local	High – for sensitive receptors close to site	Short term	High	High	High	Medium	Medium Negative	Low Negative
	Air quality – reduction in local air quality through dust production and pollution from construction equipment and vehicles during decommissioning activities.	Local	Medium	Short term	Low	High	High	Medium	Medium Negative	Low Negative
	Soil contamination – possible soil contamination during decommissioning activities through diesel, petrol and	Site specific	Medium	Short term	Medium	Medium	High	Medium	Medium Negative	Low Negative

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Activity	Impact Description	Spatial Extent	Intensity	Duration	Reversibility	Irreplaceability	Probability	Confidence	Significance and Status	Significance and Status
	contaminant spills from construction vehicles/equipment.									
	DECOMMISSIONING PHASE – INDIRECT IMPACTS									
	None.	-	-	-	-	-	-	-	-	-
	DECOMMISSIONING PHASE – CUMULATIVE IMPACTS									
	None.	-	-	-	-	-	-	-	-	-

No-go alternative (compulsory)

Should this project not go ahead, there will be no construction of the proposed lighthouse within the proposed site. This will result in no impacts occurring on the biophysical environment including soils, air quality etc. and will result in low or no visual impact. However, this will result in a situation whereby a new lighthouse cannot be erected to replace the existing lighthouse which has reached the end of its lifespan. This is an undesirable option as there will be negative implications on safety from a marine perspective, as well as lost opportunities for the economic development of the local community.