

Pollution is inevitable, especially during the construction phase. Air pollution, water pollution, land pollution and noise pollution are anticipated to be experienced during the construction phase to a greater extent, and minimally during the operation phase. All types of pollution have negative consequences, including health and environmental impacts, hence their effects need to be mitigated by all means. The direct impacts of air pollution are considered to be significantly moderate, however, short term during the construction phase. Similarly, they are likely to be moderate during the operation phase, but may have long-term impacts if not mitigated. In the same vein, water pollution is anticipated to have moderate to low impacts, both during the construction and operation phases. In terms of land pollution, the anticipated impact is likely to be low during the construction phase and high during the operation phase. Nevertheless, it needs to be mitigated to avoid the worst consequences in the long term. Positive impacts of waste have been identified, as it can contribute to economic development, hence the recommended need to invest in waste management. Apart from the rest of the type of pollution been discussed earlier, noise pollution is likely to be experienced, however, with low significance.

The proposed development will not only have negative impacts; it will have positive impacts too. Through this development, major socio-economic challenges such as lack of affordable and decent education, job opportunities and access to basic facilities such as educational and recreational, and lack of public open market space for small/micro enterprises was partly addressed. The development will also make a significant contribution to the attainment of various development frameworks, such as the HPP, NDP 5, Vision 2030 and the SDGs. In terms of impacts, the contribution of the proposed development to the socio-economy will be high, and long-term during the operation phase. Moreover, depending on affordability, in order to contribute to the environmental integrity, the use of alternative technologies is highly recommended.

Although the development will have negative impacts on the environment, some of which may be significantly moderate, it is strongly recommended that the proposed mitigation measures be implemented. However, looking at socio-economic impacts, the benefits of the development can already be confirmed, meaning it will be highly beneficial to the Onanime Village and Okatana Constituency community, and to Oshana Region at large. It is therefore strongly recommended that an ECC should be awarded for the proposed development to go ahead. This scoping assessment has not recommended a full EIA, as there will be no need for special studies. For that reason, this scoping report is accompanied by an EMP, presented in Section 8.

## **11. ENVIRONMENTAL MANAGEMENT PLAN**

### **11.1. Aim**

The EMP presented in this section aims to ensure that all the identified mitigation measures are implemented in order to avoid the worst environmental and social impacts. As a requirement of the Environmental Management Act of 2007, and of the EIA regulations of 2012, every environmental assessment report should be accompanied by an EMP.

### **11.2. Approval**

This particular EMP seeks approval from the Office of the Environmental Commissioner under the MEFT in order to become implementable. Upon approval from the MET, the proponent will be issued with an ECC, for the development to go ahead. It will be expected that the proponent (Atlantic Private School), the contractors and every contributor to the development, both the construction and operational activities, should stick to the terms and conditions that was presented in the ECC.

### **11.3. Roles and responsibilities**

The overall responsibility for the implementation of the EMP was be in the hands Atlantic Private School. This is due to the fact that the proposed development has many potential negative environmental impacts, which are likely to be experienced both during the construction and operational phases. Therefore, Atlantic Private School, the proponent should make sure that the EMP is implemented during both phases. However, it can work together with the contractors or operational managers such as the construction company managers, business managers, school managers, entrepreneurs and the managers for the recreation facilities or anyone else involved in the development. This will ensure that the worst impacts are avoided.

### **11.4. EMP in details**

The EMP is presented in form of a matrix, indicating the key activities of concern, which are have potential impacts in the development. Under the matrix are the major aspects of concerns for the construction and operational activities, the anticipated impacts of such aspects, required management actions, responsibility for action, as well as the timeframe for each of the action.

#### 11.4.1. Administrative aspects

Aspect	Impact	Management Action	Responsibility for Action	Time frame
Implementation and monitoring	Ensure compliance with mitigation measures	<ul style="list-style-type: none"> <li>All key aspects of the EMP should be implemented, both during the construction and the operational phases.</li> <li>Conduct regular site inspections during the construction phase.</li> <li>Hold regular meetings with workers both during the construction and operational phases to discuss key issues related to the EMP.</li> </ul>	<ul style="list-style-type: none"> <li>Atlantic Private School</li> <li>Project managers (Construction Phase)</li> <li>All managers (Operation Phase)</li> </ul>	Short-term (entire construction phase)  Long-term (entire operation phase)
Communication	Ensure sound communication with the Onanime Community or IAPs	Open communication should be maintained between the proponent and the Onanime Community and IAPs with regards to the environmental and social issues throughout the construction and operational phases.	Atlantic Private School	Long-term (as from project inception)
Grievance Procedure	Social performance Environmental protection	<ul style="list-style-type: none"> <li>A mechanism for dealing with grievances should be developed</li> <li>The IAPs should be informed about the Grievance Mechanism</li> <li>All key concerns for the IAPs should be recorded and addressed</li> </ul>	Atlantic Private School	Long-term (as from project inception)
Training, awareness creation and induction	<ul style="list-style-type: none"> <li>Social performance</li> <li>Environmental protection</li> </ul>	<ul style="list-style-type: none"> <li>All the construction workers should be inducted and trained.</li> <li>All the operational workers should be inducted and trained.</li> <li>Sign boards should be erected for any general awareness needed to be created where possible.</li> </ul>	<ul style="list-style-type: none"> <li>Atlantic Private School</li> <li>Contractor (Construction Project Manager)</li> </ul>	<ul style="list-style-type: none"> <li>Prior to construction and during construction</li> <li>Before and during the operation</li> </ul>

		<ul style="list-style-type: none"> <li>• Road signs should be erected anywhere driving awareness is needed.</li> <li>• Further awareness can be raised through meetings and presentations.</li> </ul>		phase
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#### 11.4.2. Construction activities

Aspect	Impact	Management Action	Responsibility for Action	Time frame
Site preparation	<ul style="list-style-type: none"> <li>• Re-location of 3x25mm pipe line and diversions outside the construction site.</li> <li>• Land damage</li> <li>• Loss of vegetation (insignificant)</li> <li>• Loss of fauna species</li> <li>• Alteration of topography and geomorphology</li> </ul>	<ul style="list-style-type: none"> <li>• Relocation of existing pipeline for three (3) households will be carried out by Atlantic Private School cost.</li> <li>• No land clearing should be allowed beyond the proposed construction area. Remaining vegetation should be preserved.</li> <li>• The site should be clearly demarcated.</li> <li>• No animal must be killed or injured at the construction site rather assisted migration shall be employed where necessary.</li> <li>• Off-road driving beyond the construction area by earthmoving equipment should be minimized.</li> <li>• Professional construction designs must be in place and be implemented by qualified engineers.</li> <li>• Erection of the buildings must comply with the National Building regulations.</li> <li>• Qualified Civil Engineers must be contracted as per the Engineering</li> </ul>	Construction contractors (Project managers)	Pre-construction and during construction

		<p>Council to supervise the construction process, and to ensure the application of The environmentally sound principles.</p>		
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		<ul style="list-style-type: none"> <li>• The removed soil layer should be used wisely and should not be allowed to cover vegetation in the vicinity.</li> <li>• Culverts must be constructed to aid the flow of water and minimize water erosion as a result of the hilly and slope nature of the construction site.</li> </ul>		
Pollution, solid waste generation and disposal	Air pollution	<ul style="list-style-type: none"> <li>• Dust must be settled using water during the construction period, regularly.</li> <li>• The entire construction team must be provided with dusk masks, to prevent the inhalation of dust particles.</li> <li>• Open stockpiles of cement bags must be avoided, and must be covered at all times.</li> <li>• The sewerage system should be regularly maintained to avoid smell nuisance from the septic tanks.</li> <li>• Burning of waste at construction site is not allowed, instead the municipal waste sites must be utilized, and waste must recycle, re-used and its generation must be reduced.</li> <li>• Construction of temporal bitumen roads must be implemented on busy sections of construction sites, where necessary.</li> </ul>	Project Manager Construction workers	Regularly (continuous/ongoing)
	Water pollution	<ul style="list-style-type: none"> <li>• Water should be used wisely, and use of too much water during construction must be avoided.</li> <li>• The water used for curing should be sprayed on the concrete structures.</li> <li>• Ponds should be constructed using</li> </ul>	<ul style="list-style-type: none"> <li>• Project Manager</li> <li>• Contractors</li> <li>• Construction workers</li> </ul>	Regularly (continuous/ongoing)

	<p>cement and sand mortar to prevent water from flowing away from the surface while curing.</p> <ul style="list-style-type: none"> <li>• Waste water should not be poured on the vegetation, or allowed to spill on them, but should be safely disposed.</li> <li>• Paint and cleaning products must be safely disposed to prevent excessive water pollution.</li> <li>• Hazardous liquids should be professionally disposed to prevent both surface and underground water pollution.</li> <li>• Recreational water facilities must be recycled and disinfected to prevent the spread of waterborne infections.</li> <li>• Biological water treatment mechanism must be employed to prevent next hierarchical level pollution such re-use through gardening.</li> </ul>		
Land pollution	<ul style="list-style-type: none"> <li>• Basic waste management practice education to the contractors can help with anti-land pollution campaign during and after construction.</li> <li>• Waste generation must be minimized and where possible waste must be eliminated.</li> <li>• Adequate waste collection facilities should be well placed at construction site.</li> <li>• Useful waste materials must be re-used.</li> <li>• Unlawful deposit of waste on open land should be avoided and disposal shall be done according to national and</li> </ul>	<ul style="list-style-type: none"> <li>• Construction (Project Manager)</li> <li>• Contactors</li> </ul>	Pre-construction and during construction

	<ul style="list-style-type: none"> <li>international standards and regulations.</li> <li>An environmentally sound sewage system should be in place e.g. eco-toilets for the construction workers should be constructed prior the actual construction.</li> <li>Recycling of waste materials should be promoted. All recyclable materials such as papers, cans, plastics and glasses can be segregated (use waste segregation bins) and marketed to local recycling companies.</li> <li>No burning of waste should be done on land.</li> </ul>		
Noise pollution	<ul style="list-style-type: none"> <li>Noise pollution should be kept minimal during construction should be kept minimal.</li> <li>Night time construction activities must be avoided. All construction activities should not go beyond 18h00.</li> <li>Use of construction equipment with noise generation beyond the World Health Organizations' (WHO's) permissible noise level limit must be communicated to nearby residents before schedule.</li> <li>Speed limit to and from the site should be set.</li> <li>Use of sport and recreational facilities should be communicated to inhabitants where necessary before schedule.</li> </ul>	<ul style="list-style-type: none"> <li>Project Manager</li> <li>Contractors</li> <li>Construction workers</li> </ul>	Pre-construction and during construction

### 11.4.3. Safety and Security, Occupational Health and Working Conditions

Aspect	Impact	Management Action	Responsibility for Action	Time Frame
Presence of construction teams and equipment	Community and construction workers' safety and security	<ul style="list-style-type: none"> <li>Construction companies should be ISO 14001:2016 certified (using ISO 14001:2016 can provide assurance to company management and employees as well as external stakeholders that environmental impacts are being measured and improved as per the EMP.</li> <li>A Construction Safety and Security Plan should be developed and implemented according to ISO 14001:2016.</li> <li>All personnel at the construction site must be made aware, and comply with the Construction Safety and Security Plan.</li> <li>Fence off the construction site where necessary to prevent accidents.</li> <li>Avoid unauthorized and other daily visitors at the construction site during the construction phase.</li> </ul>	Construction Project Managers	Pre-construction and during construction
Health of the workers	Construction workers' performance	<ul style="list-style-type: none"> <li>Namibia's health and safety regulations should be adhered to, as per the Labour Act No. 11. of 2007, which is being implemented according to the International Labour Organization (ILO) guidelines.</li> <li>Training on occupational therapy should be provided to all construction employees.</li> <li>First Aid kits should be made available</li> </ul>	Contractors (Health and Safety)	Pre-construction and during construction

		<p>at the construction sites.</p> <ul style="list-style-type: none"> <li>• All employees should be provided with protective materials (e.g. dust masks, hand gloves and overalls).</li> <li>• Examinations for the specific type of work which require employees' medical examinations certificates should be done before hiring the personnel.</li> </ul>		
Labor and working conditions	Construction workers' performance	<ul style="list-style-type: none"> <li>• Namibia Labour Act No. 11 of 2007 shall be adhered to and specific reference to international labour organizations. guidelines shall be taken in consideration.</li> <li>• The Grievance Mechanism should be implemented in line with the Namibian Employment and Labor Act of 2018.</li> </ul>	Atlantic Private School	Duration of construction activities

#### 11.4.5.. Socio-economic aspects

Aspect	Impact	Management Action	Responsibility for Action	Time Frame
Employment creation	<ul style="list-style-type: none"> <li>• Poverty reduction</li> <li>• Local economic upliftment</li> </ul>	<ul style="list-style-type: none"> <li>• High priority should be given to Namibian companies involved in architecture, civil engineering, structural engineering, electrical engineering, mechanical engineering and quantity surveying when it comes to the project design.</li> <li>• Namibian construction company construct the proposed developments e.g. School</li> </ul>	<ul style="list-style-type: none"> <li>• Atlantic Private School</li> <li>• Contractor</li> </ul>	Pre-construction and before the actual operation

		<ul style="list-style-type: none"> <li>• Construction materials should be procured from local supplier and surrounding areas.</li> <li>• The majority of people to be employed both during the construction and the operational phases should be from Oshana Region and surrounding areas while few of the supporting (experienced) staff should be sourced externally (regionally or nationally)</li> </ul>		
Urban development	Infrastructure development	The integrity of the infrastructure should be well maintained	Atlantic Private School	Ongoing
Housing provision	<ul style="list-style-type: none"> <li>• Housing shortage problem partly addressed</li> <li>• Increase in rates and taxes for the Windhoek council</li> </ul>	<ul style="list-style-type: none"> <li>• High priority should be given to the Workers without local accommodations.</li> <li>• Rates and taxes for the developments was be in accordance with the council rules and regulations.</li> </ul>	Atlantic Private School	

#### 11.4.6. Waste Management

Aspect	Impact	Management Action	Responsibility for Action	Time Frame
Solid Waste	<ul style="list-style-type: none"> <li>• Soil pollution</li> <li>• Water contamination</li> <li>• Aesthetic view</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness raising on: avoiding waste generation, waste reduction, re-use and repair.</li> <li>• Littering must be avoided by all means.</li> <li>• Sufficient provision of materials/equipment to dispose waste, placed at reasonably distances and at strategic areas.</li> <li>• Solid waste must be disposed in the provided waste bins/containers.</li> <li>• Full waste bins should be emptied on time and should not be left to overflow.</li> <li>• A temporary disposal site should be put in place during the construction phase.</li> <li>• All general waste should be disposed of at Oshakati Town Council landfill site, during the operational phase.</li> <li>• Building rubbles should be disposed of at the nearest satellite site.</li> <li>• Re-use of waste materials should be promoted.</li> <li>• Recycling should be promoted.</li> <li>• Frequent monitoring of waste handling at the site.</li> </ul>	<ul style="list-style-type: none"> <li>• Atlantic Private School</li> <li>• Contractors</li> </ul>	During the construction and the operational phases
Liquid waste	<ul style="list-style-type: none"> <li>• Underground water contamination</li> <li>• Soil contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Unused paints and other liquids should not be discarded on the ground.</li> <li>• All finished and unfinished</li> </ul>	<ul style="list-style-type: none"> <li>• Project manager (during construction)</li> <li>• Atlantic Private School</li> </ul>	During the construction and operation phases

	<ul style="list-style-type: none"> <li>• Odour</li> </ul>	<p>containers must be kept tightly closed at all times, be disposed in a proper manner at Oshakati town council landfill site</p> <ul style="list-style-type: none"> <li>• A good sewer system should be constructed to cater for the total sewer from all ablution facilities.</li> <li>• Leakages should be constantly monitored.</li> <li>• Septic tanks should be regularly monitored and managed.</li> <li>• Regular soil sampling to monitor any possibility of soil contamination.</li> </ul>	<ul style="list-style-type: none"> <li>• Contractors</li> </ul>	
Hazardous waste	Soil and water contamination	<ul style="list-style-type: none"> <li>• Hazardous waste such as paint, cleaning chemicals, and used oil should be stored in safe containers and safely be disposed of at Oshakati Town Council landfill site</li> <li>• None should be exposed to the open environment.</li> </ul>	<ul style="list-style-type: none"> <li>• Contractors</li> <li>• Atlantic Private School</li> </ul>	During construction and during the operational phases
Smoke	Air pollution	Smoke must be avoided at all costs.	<ul style="list-style-type: none"> <li>• Construction employees</li> <li>• Onanime Village residents</li> </ul>	During construction and during the operational phases

### 11.4.7. Monitoring and Reporting Plan

The following plan will be implemented for the purpose of monitoring and reporting, both during the construction and operational phases. Reports should be submitted to the MEFT.

Aspect	Implication	Frequency	Responsibility for Action
Implementation of the EMP	Environmental protection and social performance	<ul style="list-style-type: none"><li>• Bi-weekly during construction</li><li>• Every six months during the operation phase</li></ul>	<ul style="list-style-type: none"><li>• Atlantic Private School</li><li>• External Auditors</li></ul>