9. Proposed organizational structure, roles and responsibilities

The existing responsibilities of the Environmental Management Section (EMS) of the Overstrand Local Municipality can be summarized as follows: *Make input into and follow the requirements of the IDP, the SDF, the EMF, the management documents for the municipality such as the estuary management plans, nature reserve management plans and any other policies or documents as may be drawn up from time to time.*

These responsibilities have to be extended to include the following:

1. Promotion and facilitation of corporate environmental legal compliance through management of the EMS
2. Establishment and maintenance of an environmental management information system
3. Ensuring compliance with integrated environmental management as well as the requirements for water use licensing
4. Development and facilitation of strategic environmental sectoral plans.

Table 4 outlines the recommended responsibilities and implementation tools for each task. This includes initiatives where the OLM is working together with the Overberg DM, such as the air quality management. In addition, liaison with the provincial and national authorities needs to be on-going.

Table 4: Responsibilities and tasks associated with the extended responsibilities of the EM Section

Responsibility	Tasks	Implementation tools
Strategic environmental sectoral plans		
Climate change	Planning: land use planning; EIAs; protected area expansion; collaboration with industry; water supply systems; reduced GHG emissions; green economy; disaster planning	Compile a climate change strategy
Land care	Erosion; pollution	Compile a land care strategy
Estuary management	Ensure compliance with relevant legislation and continued protection of estuaries There are currently three draft estuary management plans in place (Klein River, Bot River & Uilkraalsmond). There are also estuary forums for each of these estuaries. Estuary forums have been established for the Klein River, Bot River, Uilkraalsmond and Onrus estuaries. The municipality is currently leading the process for the compilation of an Onrus estuary management plan	Develop, finalise and implement EMPs for all estuaries in the OLM Establish estuary management committees/forums for estuaries not currently having committees/forums (with representatives from the catchment management agency/DWS, landowners (upper catchment and in vicinity of estuary), provincial government (environment). Monitor the implementation of the estuary management plans.
Water resources	Identification and protection of the integrity of water resources in the OLM	Establish/finalise a GIS related to water resources. Integrate the environmental overlay zone in relevant existing municipal systems (e.g. town planning schemes). Compile a catchment profile and implement water resource protection measures through the following measures: • Review of EIAs in the jurisdiction area of the OLM and stating relevant requirements • Ensure that municipal operations comply/support water resource protection measures • Incorporate water resource protection measures in town planning scheme (storm water management, wetland protection, riparian zone protection

Responsibility	Tasks	Implementation tools
Strategic environmental sectoral plans		
		etc.)
		Integrate data and information about: • Land use planning • Spatial development frameworks • Open space systems • Conservation plans (e.g. biodiversity, nature conservation, protected areas)
Coastal zone	Coastal set-back lines – established by the Province in consultation with municipalities; NOTE - some beach regulations have been 'saved' from the Sea Shore Act (1935)	The determination of the Overberg coastal setback lines was done in conjunction with the Department of Environmental Affairs: Sub-Directorate: Coastal Impact Management Directorate: Spatial Planning and Coastal Impact Management. Ensure that the setback lines are included in town planning schemes and conformed with in the event of all new developments
Protected areas	Liaise with provincial and national authorities; liaise with the public; incorporate individual reserves into larger units (e.g. conservancies); manage open space with conservation objectives in mind	Set conservation targets for protected areas Establish public/private partnerships (PPPs) regarding the conservation and management of sensitive areas
Flora	Liaise with provincial and national authorities on the conservation of the diversity (e.g. alignment of mandates); liaise with the public; design open spaces to address the conservation of flora and fauna; liaise with the EPWP (Working for Water and other programmes) to conserve the biodiversity)	Link the distribution range of protected species with the strategy for protected areas

Responsibility	Tasks	Implementation tools
Strategic environmental sectoral plans		
Fauna	Overall conservation to conserve ecological functioning and processes	Link the distribution range of protected species with the strategy for protected areas
Alien invasive species control	Compliance with NEMBA	Alien invasive species control plan to be developed
Environmental management system (EMS)	Ensure that the requirements of the EMS are adhered to	Facilitate the development and implementation of the EMS through: • Training • Internal audits and audit reporting • Bi-annual reporting to top management and annual reporting to Council
Wetland identification	Ensure that wetlands in the municipal area have been identified and that new service delivery infrastructure does not traverse wetlands or have impacts on wetlands without the required environmental authorisations	Develop a wetland inventory by refining and ground truthing the NFEPA wetland layer Ensure inclusion of the wetland locations in the town planning schemes Make the wetland GIS layer available to developers and the Provincial Government

This page was left blank

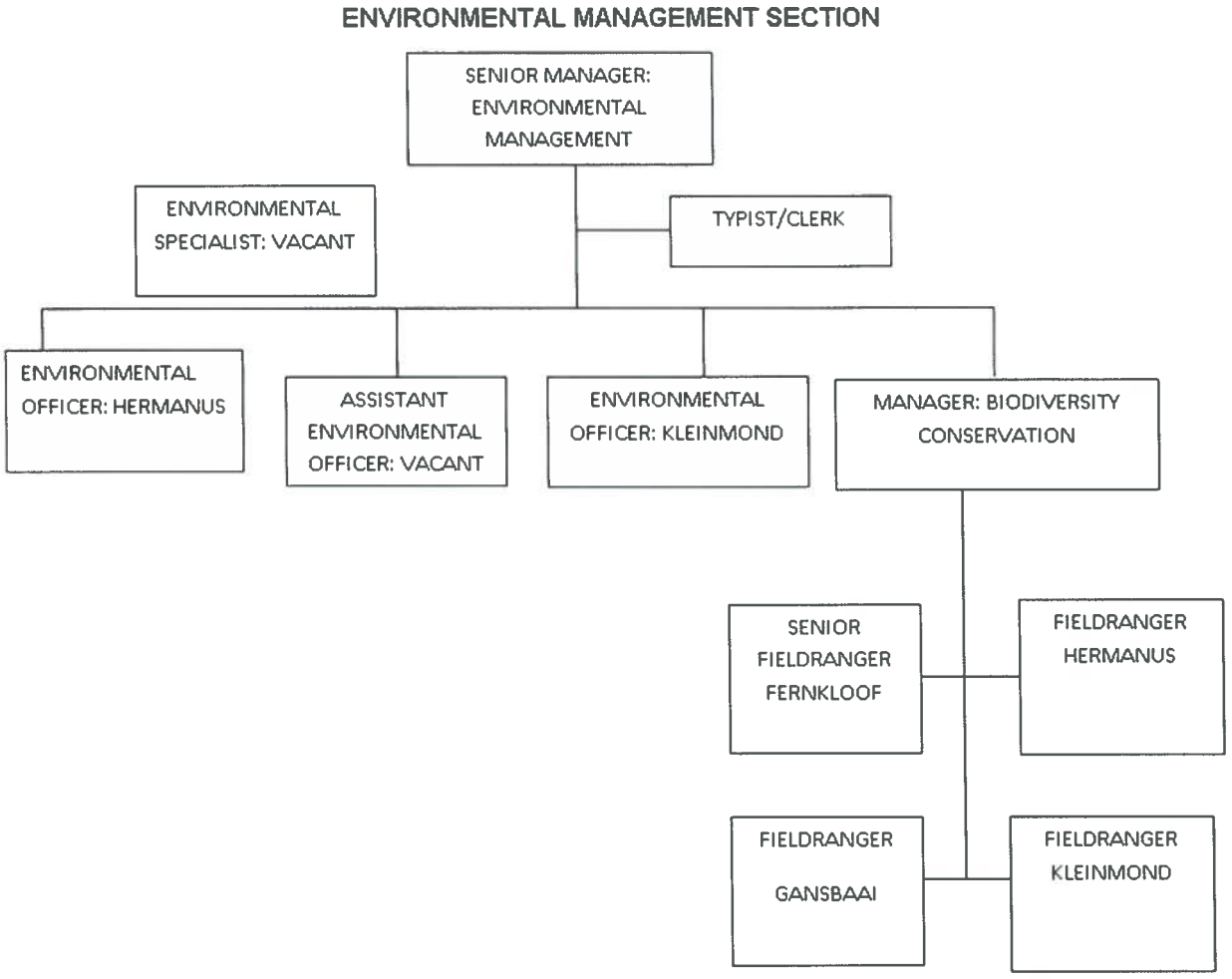

Figure 3: Current organizational structure of the OLM Environmental Management Section

The organizational structure in Figure 3 relates to the Environmental Management Section. The review of the current structure will be investigated by the OLM with reference to human resources and available budget and then approved. The duties related to the positions indicated in the proposed organisational structure are indicated below.

9.1. Senior Environmental Manager

- Manage the total section as well as: strategy, information and training
- Oversee the development and implementation of sectoral strategies
- Develop and implement municipal training and awareness as well as community awareness programme
- Coordinate the management of environmental information for planning and monitoring purposes

9.2. Regional Manager

The Regional Manager oversees the Environmental Officer of each sub region. The main objectives of this section are:

- Progressive development and implementation of a corporate environmental management system to reduce the municipality's environmental footprint and promote/ensure environmental legal compliance

- Evaluate all developments (development proposals, town planning applications, building plans and infrastructure projects) for environmental sustainability
- Liaise and engage with stakeholders concerning the state of the environment and advise the Municipal Council and Municipal officials on environmental matters.

9.3. Biodiversity Conservation Manager

- Management of municipal nature reserves and open spaces of biodiversity importance
- Overseeing the development and implementation of an alien invasive management strategy and coastal management strategy.

10. IEMP operational manual: governance structures, procedures and organizational alignment

An EMS has been developed for the Hermanus Waste Water Treatment Works. This is serving as an example for the development of specific EMSs in the rest of the municipality. The relevant documentation that has been developed is contained in an Annexure.

10.1. Governance instruments

The following governance instruments form part of the IEMP:

1. Appointment of an environmental management representative in each department identified to have significant environmental impacts. These are:

1.1. Operational Department
1.2. Engineering Department
1.3. Fleet Management

2. Environmental performance management, keeping of records, management review and improvement of the IEMP as set out below
3. Bi-annual reporting on environmental performance to municipal top management
4. Annual reporting on environmental performance to Council
5. Inclusion of environmental targets and objectives in the SDBIP and mid-year budget and performance report
6. Inclusion of environmental responsibilities in the contract of Section 57 employees
7. Inclusion of relevant EMPs in the IDP
8. Inclusion of relevant key performance indicators (KPIs) on the Compliance Assist System

In terms of compliance of contractors (appointed by the OLM) to environmental legislation and any EMP set by the OLM, the following governance instruments must be deployed:

1. Proposed infrastructure developments must be screened by the EM Section to determine if any environmental authorisations and/or water use licenses are required as well as impacts on environmental conservation/sensitive areas in terms of the EMF and environmental GIS overlay.

2. Tender documents must include legislative compliance, as well as any EMP approved in terms of water use license and environmental authorisation
3. Tender documents must refer to the generic EMP that has been compiled for activities where no EMP is available. The purpose of the generic EMP is to prevent incidences of legal non-compliance and promote environmental best practice and environmental protection
4. Contracts with the successful tenderer must include performance management measures regarding environmental compliance as set out above, as well as penalties and corrective measures in the event of non-compliance
5. The EM Section will audit contractors (with reference to projects that did not require an environmental authorization and does not have an Environmental Control Officer (ECO) as part of the approved project) based on the aforementioned performance management measures
6. The EM Section must receive copies of all approved infrastructure development contracts (with reference to the aforementioned projects) to enable them to select activities to be audited based on environmental sensitivities.

10.2. Environmental performance management

10.2.1. Setting of objectives and targets

1. Objectives and targets must be identified for each significant impact in the respective divisions in cooperation with the EM Section, the EMR and relevant personnel and management of the division
2. Objectives and targets must be formally recorded; responsibilities must be assigned as well as time frames and must be formally communicated. Objectives and targets must be measurable
3. To ensure continual improvement new/additional objectives and targets are to be set at least annually.

10.2.2. Environmental management Plans

1. EMPs will be formulated for each environmental objective and target by the EMR and any other person identified by the EMR and/or assisted by the EM section
2. EMPs will include roles and responsibilities, timeframes, means of achieving objectives and targets as well as progress review dates
3. Work instructions will be formulated by the EMR and any other person identified by the EMR, to ensure correct implementation of all EMPs
4. EMPs will be revised by the EMR with the assistance of the EM section if environmental aspects and impacts changes or when objectives and targets have been reached
5. All EMPs will be kept by the EMR and copies thereof will be available at each relevant section in the division by the person in control of a section, as well as persons responsible for actions, as indicated on the EMP
6. Continual improvement will be demonstrated by the annual update of the EMP.

10.2.3. Management reviews

Progress with objectives and targets as well as EMPs must be reviewed at every departmental management meeting.

10.3. Keeping of records

Environmental records of the following must be kept by the EMR:

1. Permits, licenses, environmental authorisations and environmental management plans
2. Maintenance and calibration records for equipment

3. Records on incidents and associated corrective actions that were taken
4. Records on emergency preparedness and response
5. Records on audit results
6. Records on management reviews
7. Records on monitoring and measurement
8. Training records (where applicable)
9. Communication with and from the relevant environmental authorities.

The municipality has an existing electronic filing system. The EMS Section has to liaise with the relevant staff to create new files (related to the list above) as per the requirements of the IEMP.

Hardcopies of specific documents e.g. permits/licenses on site have to be kept onsite in line with the approved environmental management plans of environmental authorisations for projects.

10.4. Management review and improvement of the IEMP

1. Internal management reviews must be carried out bi-annually and minutes must be taken during the meeting
2. The initial review meeting is attended by the EMR, management of the particular division and representatives from the EM Section
3. Review findings are discussed and feedback is given on performance of the division in terms of progress with targets to top management and any related problems and changes are discussed
4. Any shortcomings or changes identified during the review must be addressed by the EMR
5. The management of the division must report bi-annually on the status of their department to the top management of the municipality and annually to Council
6. The EM Section must review all reports submitted as part of the management review process and make recommendations on an annual basis for the improvement of the IEMP.

11. Monitoring and measurement

In order to monitor and measure the status of the IEMS as well as continual improvement, the following is proposed:

1. An environmental monitoring and measurement programme
2. A reporting protocol to facilitate environmental performance management
3. A set of indicators
4. Monitoring, measuring and reporting toolkit and protocol
5. Record keeping.

11.1. Environmental indicators

The following environmental indicators should be reported on:

1. Total number of findings with a high significance (during auditing and management reviews)
2. Total number of findings with a medium significance (during auditing and management reviews)
3. Status of the following (with reference to the generic EMP, sectorial plans and IEMP):

3.1. Alien vegetation status
3.2. Biodiversity conservation status
3.3. Complaints received from the community in terms of environmental matters
3.4. Emergency incidences

3.5. Waste water effluent quality
3.6. Rehabilitation initiatives
3.7. Erosion related to storm water
3.8. River and wetland management and status

4. Age of findings in months before close-out
5. Number of management procedures found to be inadequate
6. Number of findings with respect to general duty of care as per NEMA.

In order to determine the significance of findings, the methodology below should be followed.

11.2. Methodology to rate and assess significance

$$Significance = \frac{Probability \times Severity}{Mitigation}$$

11.2.1. Determining the severity of an impact

Determining the severity of an impact is a function of intensity, duration and extent, divided by the extent to which mitigation can successfully be applied:

$$\text{Severity} = \text{Intensity} + \text{Duration} + \text{Extent}$$

Each of the three factors used to determine the severity of an impact are described below:

11.2.1.1. Intensity factor

The level of intensity is the sum of volume, toxicity, social impact and ecological impacts. Note that either Volume A or Volume B is used (refer to the description) but never both at the same time.

Table 5: Intensity assessment table

	Low (1)	Medium (3)	High (5)	Subtotal (sum)
Volume (A) (refers to process input and output substances/ material or products)	Less than 80 m^3 at any one time (or low volumes relative to industry/commercial standards)	Between 80 and 300 m^3 at any one time (or medium volumes relative to industry/ commercial standards)	In excess of 300 m^3 at any one time (or high volumes relative to industry/ commercial standards)	
Volume (B)	Relatively small	Medium	Large	

	Low (1)	Medium (3)	High (5)	Subtotal (sum)
(refers to natural resources)				
Toxicity	Toxicity is on par with everyday goods in widespread use and is biodegradable	Toxicity can be compared to those that have to be handled with some caution and are non-biodegradable	Toxicity is on par with toxic/dangerous/ flammable substances that are non-biodegradable	
Social	No or very limited impact	Some impact on immediate communities, but cannot be considered as disruptive	Major disruptive impact on surrounding communities	
Ecological	Natural functions not affected or negligible	Environment affected but natural functions and processes continue (Some damage or wildlife injury may occur) Impact is reversible or irreplaceable loss will not occur	Environment affected to the extent that natural functions are altered to the extent that it will permanently or over the long term cease (Major damage or wildlife injury could occur) Irreplaceable loss will occur	

11.2.1.2. Duration

Duration is assessed and a factor awarded in accordance with the following:

Table 6: Duration assessment table

	Duration of Impact	Duration factor
Short term	The duration of the is impact is 1 year or less	Factor 1
Medium term	The duration of the is impact is 1-5 years	Factor 3
Long term	The duration of the is impact is 5 to 25 years	Factor 4
Permanent	The duration of the is impact is longer than 25 years and can	Factor 5

be considered as permanent

11.2.1.3. Extent

Extent describes the physical extent that the impact and factors are awarded according to the following:

Table 7: Extent factor rating and description

	Extent of the impact	Extent factor
Site	The impact only exists within the activity's footprint	Factor 1
Local	The impact could affect the whole or a considerable portion of the properties on which the activity is undertaken as well as neighbouring properties	Factor 3
Regional	The impact could affect the area, neighbouring as well as other areas further away than the immediate neighbours	Factor 5

11.2.2. Probability

Probability describes the likelihood of the impact actually occurring, and is rated as follows:

Table 8: Probability factor rating and description

	Possibility that impact will occur	Rating
Improbable	Low possibility of impact occurring due to design or history	1
Probable	Distinct possibility that impact will occur	2
Highly probable	Most likely that impact will occur	3
Definite	Impact will definitely occur	5

11.2.3. Significance rating

Following from the above, the significance rating can now be determined as follows:

Significance = Severity x Probability

The significance rating thus determined should influence the proposed project as described below:

11.2.3.1. Negligible (calculated significance rating < 25)

Positive and negative impacts of negligible significance are unsubstantial and should have little or no influence on the proposed development project.

11.2.3.2. Low (calculated significance rating 25 < 50)

The impact is limited and should not have a material effect on the decision to continue. Management intervention is required.

11.2.3.3. Moderate (calculated significance rating 50 < 90)

Positive impact: Should weigh towards a decision to continue, should be enhanced in final design.

Negative impact: Should weigh towards a decision to terminate proposal, or mitigation should be performed to reduce significance to a low significance rating.

11.2.3.4. High (calculated significance rating > 90)

Positive impact: Continue

Negative impact: If mitigation cannot be implemented effectively (into the moderate category), proposal should be terminated.

Table 9 below provides an example of how the unmitigated significance ratings are calculated:

Table 9: Significance rating

Probability	Severity								Severity rating	Significance rating (probability x severity rating)	
	Intensity		+ Duration		+ Extent		=				
Probable	2	Low	4	Short term	1	Local	2		7	14	Negligible
Probable	2	Low	4	Medium term	3	Regional	3		10	20	Low
Definite	5	Medium	12	Medium term	3	Local	2		19	85	Moderate
Definite	5	Medium	12	Permanent	5	Site	1		26	180	High

11.2.4. Mitigation

Mitigation rating can only be applied to potential impacts. Mitigation will be calculated as follows:

Table 10: Mitigation rating

Description	Factor allowed
Mitigation is not possible or positive impact of mitigation is negligible. Impact remains irreversible.	1
Mitigation is possible to some extent with moderate levels of positive impact. Impact is largely reversible with only a small portion that remains as irreversible.	2
Mitigation is possible with moderate to high levels of positive impact. Impact is reversible.	3
Mitigation is possible to such an extent that all negative impacts are reduced significantly or eliminated. Impact is completely reversible.	4

$$Significance = \frac{\text{Intensity} + \text{Duration} + \text{Extent}}{\text{Mitigation Potential}}$$

11.3. Environmental monitoring and measurement programme

Based on the indicators, the following programme is proposed:

Table 11: Indicators to measure the IEMP

Indicator	Reporting frequency and reporting recipients
a. Total number of findings with a high significance (during auditing and management reviews)	Quarterly reporting to Senior Management
b. Total number of findings with a medium significance (during auditing and management reviews)	Quarterly reporting to Senior Management
c. Status of sectorial plans • Alien vegetation status • Biodiversity conservation status • Rehabilitation initiatives • Erosion related to storm water • River and wetland management and status	Annual reporting to Senior Management and Council
d. Age of findings in months before close-out	Quarterly reporting to Senior Management
e. Number of management procedures found to be	Quarterly reporting to Senior Management

Indicator	Reporting frequency and reporting recipients
inadequate	
f. Emergency incidences	Quarterly reporting to Senior Management
g. Waste water effluent quality	Quarterly reporting to Senior Management
h. Complaints received from the community in terms of environmental matters	Quarterly reporting to Senior Management

The Environmental Management Representatives of the respective divisions/departments must report monthly to the EM Section. The EM Section will consolidate the information for the purposes of reporting as set out in Table 12 below.

For the purposes of monthly reporting to the EM Section, the following reporting format is proposed:

Table 12: Reporting format for indicators

Division:				
Month:				
Indicator	Number of	Environmental impact (soil, water, air, etc.)	Open/ closed out	Brief description of the finding
Total number of findings with a high significance				
Total number of findings with a medium significance				
Findings closed-out				
Findings still open				
Number of management procedures found to be inadequate				
Emergency incidences				
Complaints received from the community in terms of environmental matters				

12. Policy, objectives and targets

ENVIRONMENTAL POLICY

The Overstrand Local Municipality strives to achieve an exceptional quality of life for every generation and leave a legacy of stewardship. We will work together to achieve lasting and equitable prosperity; build safe, healthy, vibrant communities; and minimize our negative impacts in order to conserve the natural resources that sustain us. We are committed to improving the local environment and helping to protect it for the future. We recognise that our wide range of activities and services has positive and negative impacts upon the environment, and that we have a leading role to play in creating a sustainable town. The Municipality is implementing an environmental management system across all of its services to ensure that its significant environmental impacts will be monitored and managed, and its overall environmental performance will continually improve. To achieve this we:

- Identify all our environmental impacts
- Comply with environmental legislation
- Continually improve our environmental performance
- Regularly reviewing and report on progress

As a Green Town we strive to preserve water quality and quantity, terrestrial habitats and marine habitats, biodiversity and ecosystem integrity. Development will be pursued in harmony with the environment by using developed spaces wisely to make the best use of existing infrastructure and to minimize disturbance of undeveloped green spaces. It means considering natural cycles such as water, carbon and nutrient movement through the environment, prior to development, to protect their function and integrity. We will take an ecosystem management approach in the protection of our natural resource features. This includes land use policy, planning, incentives and education to increase tree cover, protect wetlands, create and preserve natural terrestrial, aquatic and marine habitats and corridors, manage storm water and protect groundwater and surface water resources.

Table 13: Environmental policy related actions

Outcome	Key actions	Outputs	Service responsibility	Delivery date
Municipal service delivery in line with environmental best practices	• Implementation of EMS across the municipality • Training and awareness • Appointment of environmental representatives • Training of environmental representatives	EMS implemented in all municipal departments	EM Dept. to facilitate key actions across all departments	December 2016

Outcome	Key actions	Outputs	Service responsibility	Delivery date
	• implementation of management and reporting procedures			
Overstrand jurisdiction areas are green	Development and implementation of sectoral plans	• Energy plans • Water resource protection • Biodiversity management plans • Climate change strategy • Vegetation management plan • Fernkloof management plan • Coastal management plan	EM Dept. to facilitate key actions across all departments	One completed strategy per annum

13. Toolkits

The following toolkits have been developed to assist with the effective and efficient implementation of the IEMP:

- Audit protocols
- Site checklists
- Management, risk assessment and tracking tool
- Environmental indicators in support of quarterly and annual reporting.

The toolkits are separate files.

14. Training needs

In order to ensure that the Environmental policy is successfully implemented throughout the municipality, the following actions are required:

1. Develop and implement the following training programmes for the different personnel categories as indicated in Table 14:
   - Awareness (A)
   - Job specific training (JST)
   - EMS training programmes for environmental representatives

Develop and populate an occupation classification matrix in order to identify trainees for the different training categories with reference to Table 14.

2. Undertake a needs analysis for each of the occupational classes where indicated in order to determine the need for job specific training
3. Identify existing municipal training courses where an environmental module can be included
4. Identify suitable existing environmental courses or awareness programmes or compile training material/awareness programmes according to results of needs analysis, inclusive of evaluation measures
5. Define the number and characteristics of training beneficiaries that will be trained per year
6. Compile a training programme
7. Define the quality assurance measures for the training programme
8. Undertake a gap analysis in terms departmental training and trainer capacities in terms of training programme implementation
9. Develop and implement train- the-trainer programmes where required
10. Implement the training programme
11. Monitor and evaluate the training programme.

Table 14: Environmental training needs analysis

Topic	Top Management	Middle Management	Professionals	General/ admin personnel	Workers and their supervisors
Environmental legislation and the duties these impose	■	■	■		
National Environmental Act: principles and the integration thereof in strategies and policies of the municipality	■	■	■		
Environmental impact assessments and water use licensing		■	■		
Water resource management		■	■		
Waste management		■	■		■
Environmental pollution		■	■		■

Topic	Top Management	Middle Management	Professionals	General/ admin personnel	Workers and their supervisors
Duty of care					
Biodiversity / ecosystems / wetlands / estuaries					
Environmental management systems for EMS representatives					
General environmental awareness					

= Awareness = In-depth training = Job-specific training

14.1. Community Education

Education and public awareness is an integral part of sustainable development and an important part of a community's understanding of environmental consequences and how these relate to their actions. Lack of knowledge by community members can cause the degradation of the environment. The empowerment of local communities with regards to the environment not only enables them to understand what may be wrong and how they can rectify it, but also enables understanding and appreciation, which in turn leads to a desire to conserve and protect the surrounding environment and resources.

The principles of environmental education, according to the Tbilisi Declaration, are:

1. Awareness and sensitivity to the environment and environmental challenges
2. Knowledge and understanding of the environment and environmental challenges
3. Attitudes of concern for the environment and motivation to improve or maintain environmental quality
4. Skills to identify and help resolve environmental challenges
5. Participation in activities that lead to the resolution of environmental challenges (UNESCO, 1978).

It is recommended that an environmental education strategy for local communities is developed.

The strategy should be based on prioritised local environmental problems with the root causes in attitude, understanding and behaviour of local communities. KAP studies should precede environmental educational programs.

"KAP" study measures the Knowledge, Attitude and Practices of a community. It serves as an educational diagnosis of the community. The main purpose of this KAP study is to explore changes in Knowledge, Attitude and Practices of the community. Several guidelines are available regarding the design and implementation of KAP studies.

The involvement of local stakeholders will be important in order to support educational efforts due to lack of human resource capacity of the Environmental Management Department.

15. Strategic requirements for key infrastructure, having implications for the capital budget

Based on the status quo analysis and the EMS, the following financial requirements have to be included in the budget for the future:

Table 15: Budget requirements for the IEMP

Item	Approximate cost	Responsible department
External auditing of water use licenses (x5: WWTW's)	R 60 000 per audit = R 300 000	Water and Sanitation
Landfill closure/rehabilitation	R 120 000 for an environmental impact assessment per landfill (X7)	Waste Management
Implementation of a ground water monitoring regime at all landfill sites	R500 000 per landfill site	Waste Management
Environmental training and awareness	R 100 000 for training material development and course development	Environmental Management
Development of sectoral strategies	R 150 000 per strategy	Environmental Management