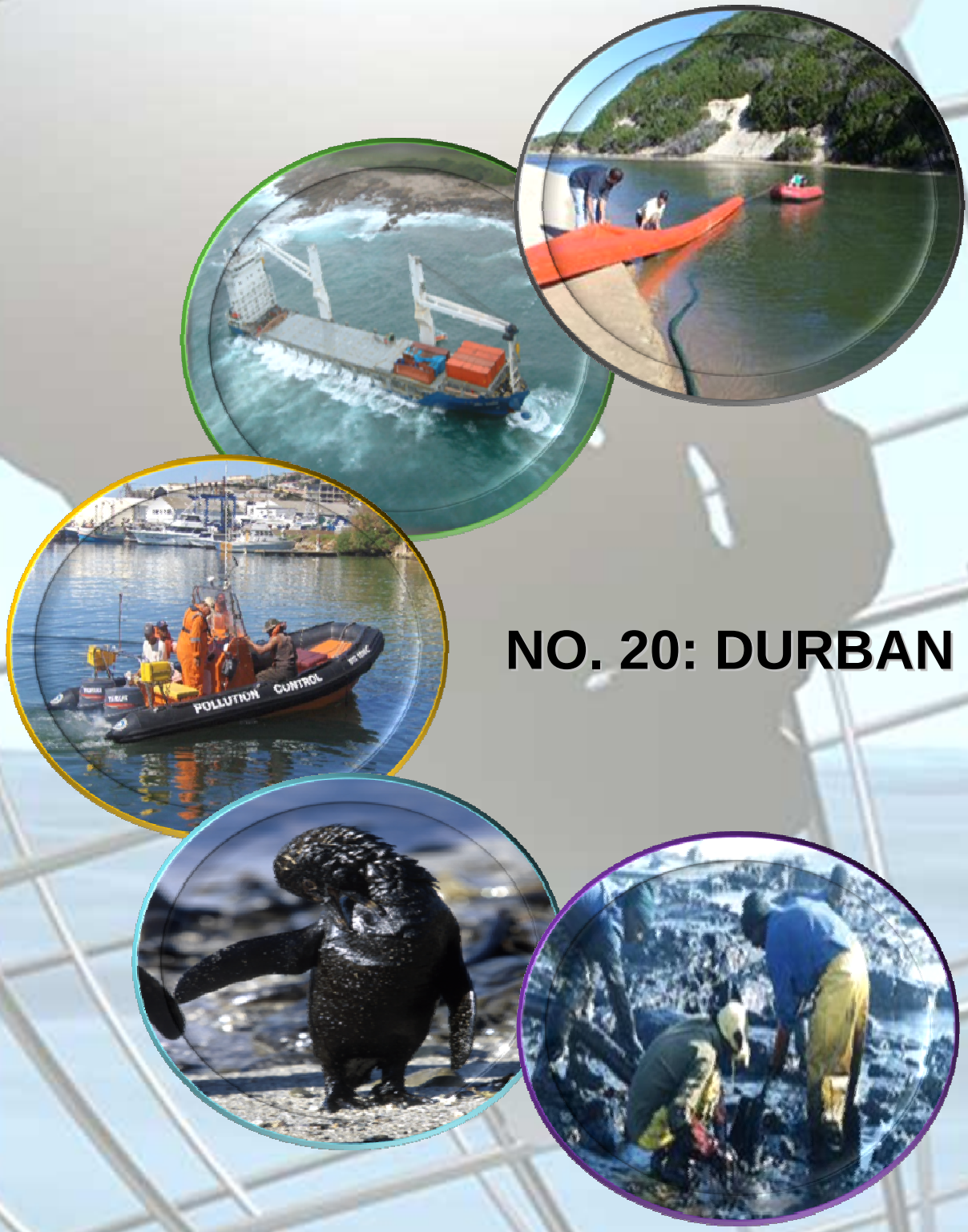
COASTAL OIL SPILL CONTINGENCY PLAN

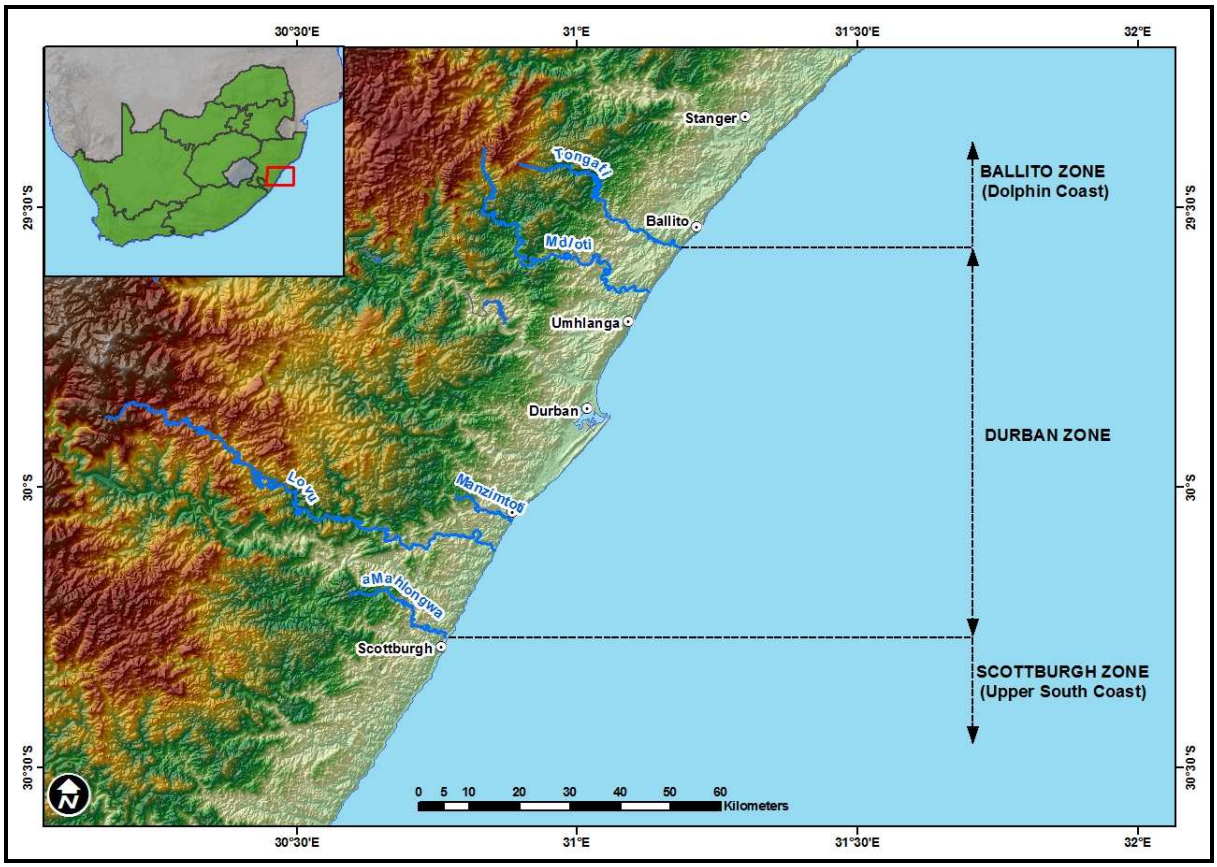


NO. 20: DURBAN ZONE

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Plan No:
Date of Issue: January 2011

COASTAL OIL SPILL CONTINGENCY PLAN
NO. 20: DURBAN ZONE



RESPONSIBLE LOCAL AUTHORITIES:

eThekwini Municipality
Ezemvelo KZN Wildlife
Transnet National Ports Authority
South African National Defence Force

Approved after due consultation with all stakeholders and authorities with the responsibility to respond to coastal oil spills in terms of this Plan.

.....
Deputy Director General: Oceans and Coasts
Department of Environmental Affairs
CAPE TOWN
Date:

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

ACKNOWLEDGEMENTS

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Due acknowledgement is given to DEA, SAMSA, local authorities, stakeholders and interested and affected parties, for their co-operation and the information that they made available.

Enact International: Cullinan and Associates provided the specialist input for the legal review.

The Locality Map and Area Map were compiled by GEOSS (Pty) Ltd.

Special thanks are due to Anton Moldan, Environmental Advisor, SAPIA for his invaluable comments, advice and peer review.

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PREFACE

In terms of the Marine Pollution (Control and Civil Liability) Act 6 of 1981, the Department of Transport is charged with the responsibility of ensuring that the appropriate actions are taken in order to minimise the impact of discharges of harmful substances (e.g. oil) from ships, tankers, or offshore installations. In terms of the South African Maritime Safety Authority Act 5 of 1998, the majority of these responsibilities are transferred to the South African Maritime Safety Authority (SAMSA). Section 52 of the SAMSA Act, however, delegates the responsibility for combating pollution of the sea and shoreline by oil to the Minister of Environmental Affairs (DEA). The implication of this is that the DEA is responsible for protection and clean-up measures to be taken once oil has been released into the sea, while SAMSA's responsibilities are limited to those actions required while the oil is within the confines of the ship.

In effect this means that SAMSA is responsible for:

- overall co-ordination of the prevention and/or combating of an oil spill incident
- control of the technical aspects of shipping casualties
- supervision of oil transshipments
- prosecution of parties guilty of the deliberate discharge of oil
- compilation of contingency plans relating to the control of shipping casualties or potential casualties
- administering the Acts relating to oil pollution
- taking charge of the legal and financial aspects relating to oil spill incidents and casualties
- control of the use of the standby oil pollution prevention tug
- the issuing of pollution safety certificates for offshore installations.

The National Department of Environmental Affairs is responsible for:

- co-ordination and implementation of coastal environmental protection and clean-up measures
- control of the use of the pollution combating vessels and surveillance aircraft
- control of the use of oil spill dispersants and dispersant spraying operations
- maintenance and supply of oil dispersant stocks and other dedicated oil spill equipment
- compilation and maintenance of the DEA Local Coastal Oil Spill Contingency Plans
- the approval of contingency plans for offshore installations, in consultation with SAMSA.

The Provincial Departments of Environmental Affairs shall:

- assist the DEA in updating the Local Coastal Oil Spill Contingency Plans
- provide support in building capacity and awareness in the local authority organisations
- provide support to local authorities in the implementation of the Local Coastal Oil Spill Contingency Plans
- ensure that their MEC is kept informed of progress.

Local Authorities have an important role to play in dealing with oil spills. They are responsible for:

- taking specified measures to prevent or remedy adverse effects of the spill on the coastal environment
- providing assistance in the form of supervision, labour, transport and equipment for the protection and clean-up of their beaches, estuaries and other areas under their jurisdiction
- making arrangements with local Traffic and Police Officers to ensure traffic and crowd control in the vicinity of the impacted area.

DISTRIBUTION LIST

Doc. No.	Distribution
	NATIONAL AUTHORITIES
2001	Director-General: Department of Environmental Affairs (DEA)
2002	Chief Director: Oceans and Coastal Conservation, DEA
2003	Deputy Director: Marine and Coastal Pollution Management, DEA
2004	Assistant Director: Marine and Coastal Pollution Management, DEA
2005	Pollution Officer: Marine and Coastal Pollution Management, DEA
2006	Director-General: Department of Transport
2007	Executive Head, Centre of Ships: Shipping, SAMSA
2008	Regional Manager: Eastern Region, SAMSA,
2009	Regional Manager: Western Region: SAMSA
2010	Regional Manager: Southern Region, SAMSA
2011	Principal Officer: Durban, SAMSA
2012	Principal Officer: Richards Bay, SAMSA
2013	Operations Manager, Maritime Information Services, SAMSA, P O Box 532, PAROW, 7477 (Attn: Ravi Naiker)
2014	Chief Director: Pollution and Waste Management, DEA
2015	Director: Compliance, Fisheries Branch, DAFF
2016	Manager: Pollution Combating Vessels, DAFF (Attn: Keith Govender)

	PROVINCIAL / REGIONAL AUTHORITIES
2017	Regional Director (KZN): Water Quality Division, Department of Water Affairs & Forestry, P O Box 1018, DURBAN, 4000 (Attn: Raj Phillip)
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2019	Head: Department of Agriculture, Environment Affairs and Rural Development, Private Bag X9059, PIETERMARTZBURG, 3200
2020	Logistics Division, Department of Defence, Private Bag X319, Pretoria, 0001 (Attn: Capt A. Liebenberg)

Doc. No.	LOCAL AUTHORITIES
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2027	The Deputy Head: Cleansing and Solid Waste: Engineering & Projects: eThekwini Municipality, P.O. Box 1038, Durban, 4000 (Attn. John Parkin)
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Doc. No.	INTERESTED AND AFFECTED PARTIES
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2035	Projects Liaison Officer: ORI SAAMBR PO Box 10712 Marine Parade 4056 KwaZulu-Natal South Africa (Alison Moor)
2036	Director: Natal Sharks Board, Private Bag 2, UMHLANGA ROCKS, 4320 (Attn: Mike Anderson Reade)
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2040	Property Manager: Tongaat-Hulett, P O Box 3381, DURBAN, 4000

AMENDMENT LISTING

No:	Date of issue:	Pages Amended:

AMENDMENTS

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Upon receipt of the amendments, the recipient is to verify its completeness and update his copy of the Plan accordingly, and then mail, or fax, the tear-off slip to the addressee given at the top of the tear-off slip. (See Appendix II)

Holders of the plan are to advise the Deputy Director: Marine and Coastal Pollution Management of any pertinent changes of telephone numbers, organisational structure or other information immediately it comes to their notice.

LIST OF ACRONYMS

AD	-	Assistant Director
CLC	-	Civil Liability Convention for Oil Pollution Damage
CROW	-	Centre for Rehabilitation of Wildlife
CRU	-	Casualty Response Unit of SAMSA
DAFF	-	Department of Agriculture, Forestry and Fisheries
DAEARD	-	Department of Agriculture, Environmental Affairs and Rural Development (KZN)
DEA	-	Department of Environmental Affairs
DD	-	Deputy Director
DOT	-	Department of Transport
EBMO	-	Emergency Barriers from Materials of Opportunity (Report 1985)
ECO	-	Environmental Conservation Officer
EMP	-	Estuary/Environmental Management Plan
EPO	-	Environmental Protection Officer
EZEMVELO	-	Ezemvelo KZN Wildlife
IOPC	-	International Convention on the Establishment of an International Fund for Compensation for Oil Pollution
JOC	-	Joint Operation Centre
JRC	-	Joint Response Committee
KZN	-	Kwa-Zulu Natal
MCM	-	Marine and Coastal Management (now Oceans and Coastal Conservation)
MCPM	-	Marine and Coastal Pollution Management (of O&C))
O&C	-	Oceans and Coastal Conservation (DEA), previously MCM
OPCSA	-	Oil Pollution Control South Africa
OPRC	-	International Convention on Oil Pollution Preparedness, Response and Cooperation
ORI	-	Oceanographic Research Institute
OSC	-	On-Scene Co-ordinator
P&I Club	-	Ship Owners Protection and Indemnity Insurers
PEPSAE	-	Probable Effectiveness of Protection of the SA Estuaries by Oil Booms (Report 1986)
PO	-	Principal Officer (SAMSA)
SAAMBR	-	South African Association for Marine Biological Research
SAMSA	-	South African Maritime Safety Authority
SANCCOB	-	South African National Foundation for the Conservation of Coastal Birds
SANDF	-	South African National Defence Force
SANParks	-	South African National Parks
SAPIA	-	South African Petroleum Industry Association
SAPREF	-	South African Petroleum Refineries
SBM	-	Single Buoy Mooring
SCC	-	Shore Control Centre
SLO	-	Shore Logistics Officer
TNPA	-	Transnet National Ports Authority
UNCLOS	-	United Nations Convention on Law of the Sea

CONTENTS

APPENDICES

ADDENDA

1. INTRODUCTION

This Oil Spill Contingency Plan covers the area for the Durban Zone on the Kwa-Zulu Natal coast. This Zone extends from the Mahlongwa River, Scottburgh, in the south, northwards along the coast to the Tongati River, near Ballito. The area includes the City of Durban which is a primary tourist destination with many popular beaches. The Port of Durban is the busiest port in Southern Africa.

The Plan sets out the respective responsibilities of the South African Maritime Safety Authority (SAMSA) and the Department of Environmental Affairs (DEA) relating to an oil spill, the organisation that is to come into effect and the actions required of Local Authorities and other organisations (collectively referred to as Local Authorities for the purpose of this plan) to combat the impact of oil pollution on the shoreline in the event of an oil spill.

All operations will be co-ordinated by the DEA On-Scene Co-ordinator as outlined in Section 8 of this Plan.

2. OBJECTIVE

The primary objective of this Oil Spill Contingency Plan is to minimise loss of time and hence, environmental damage, in carrying out the appropriate remedial action. This is to be achieved by clearly stating the functions and responsibilities of the various authorities involved, the infrastructure to be set up, and the response required by such authorities for the duration of the incident.

3. INTERFACE WITH OTHER PLANS

South Africa's national oil spill preparedness and response strategy is guided by a suite of oil spill contingency plans; each dealing with a particular aspect of the spill situation. Although each plan is a standalone document, it should be read in conjunction with the others, in order to ensure a co-ordinated approach. For the Durban Zone, the following Plans are applicable:

a. **"South Africa's National Contingency Plan for the Prevention and Combating of Pollution from Ships and Offshore Installations"**
This "National Plan" is an overall plan, setting out the policies of the Department of Environmental Affairs and SAMSA, for the Department of Transport, towards their responsibilities for preventing and combating pollution of the sea by oil. It provides an overview of the actions to be taken by SAMSA, DEA and other relevant Authorities in preparation for, and in the event or the threat of an oil spill, and outlines the formation of a Joint Response Committee.

b. **The "Coastal Oil Spill Contingency Plans"** detail the actions to be taken when there is a threat of oil impacting the shoreline or an impact has occurred. The coastline from the Orange River mouth to the Mozambique border is divided into a number of zones, each of which has its own specific Local Coastal Plan. The **Durban Zone Plan** is one such Plan and covers the area from the Mahlongwa River (near Scottburgh) in the south to the Tongati River (near Ballito) in the north. The adjacent areas are covered by the Scottburgh Zone (Upper South Coast) and Ballito Zone (Dolphin Coast) Plans.

c. **The TNPA Oil Spill Contingency Plan for the Port of Durban.** This plan outlines the response required by TNPA for Tier 1 (minor) oil spills within the Port and their role during Tier 2 and Tier 3 oil spills.

d. **The "SANCCOB Contingency Plan for the Capture, Transport, Rehabilitation and Release of Oiled Seabirds Following a Major Oil Spill off the South African Coast."** This Plan covers all incidents where seabirds are oiled along the South African coastline and adjacent islands, but excludes the KwaZulu Natal coast (where stabilisation is undertaken by CROW etc). However, if requested, SANCCOB will assist with birds from both Namibia and KwaZulu Natal.

e. **Local Authority Disaster Management Plan** for the eThekwini Municipality which is linked to the Provincial and National Disaster Management Plans.

f. **Plans for Independent Installations** which detail the response actions that are to be undertaken in the event of oil spills at or near specific installations. These installations include offshore oil tanker discharge facilities (SBM in Durban), oil exploration and exploitation sites, power stations etc.

The inter-relationship between all the Plans in the Durban Zone is illustrated in the diagram below. (See Fig. 1.)

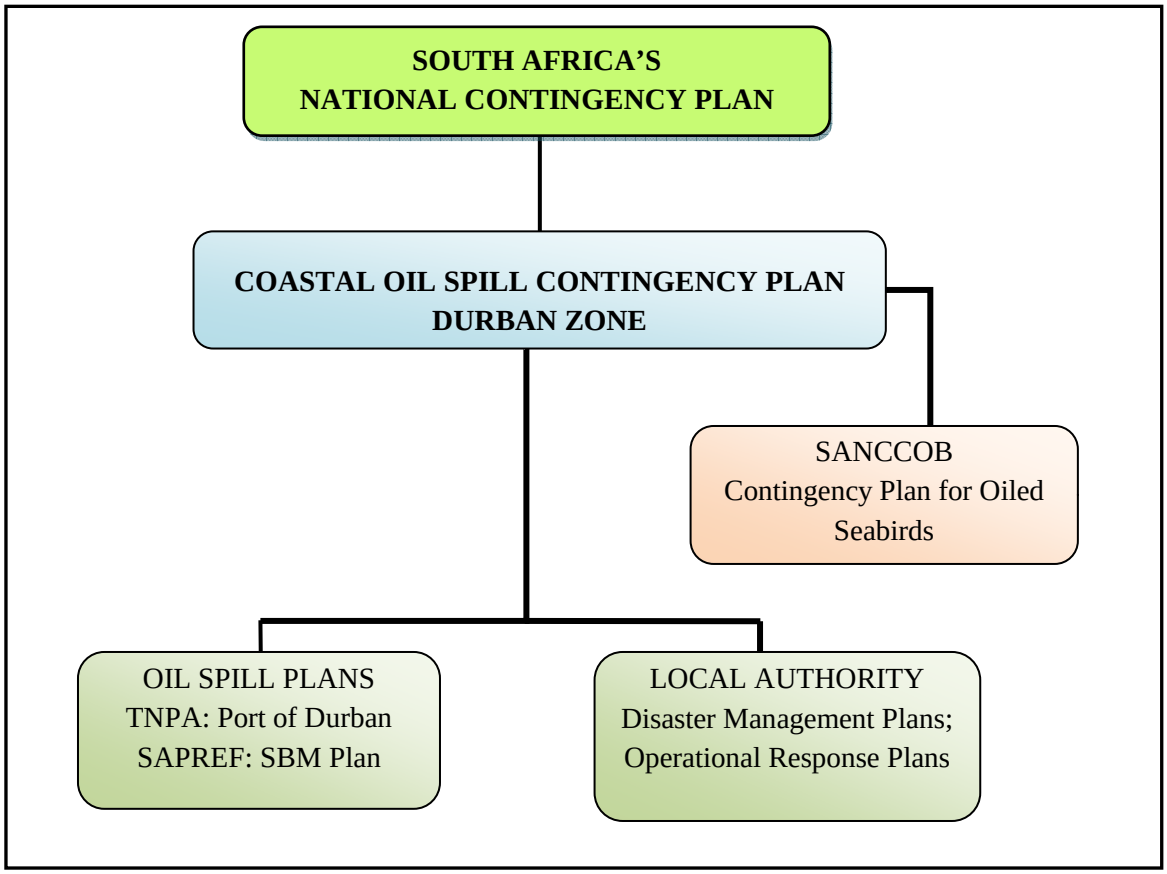


Figure 1: Inter-relationship between all the Oil Spill Contingency Plans in the Durban Zone.

4. ACTS AND AGREEMENTS RELATING TO THE COMBATING OF OIL POLLUTION

International and national legislation, relevant to combating and dealing with oil spills, is summarised below.

4.1 INTERNATIONAL CONVENTIONS (and related South African Legislation)

Below, are the main international conventions to which South Africa is a Party. For ease of reference, the conventions have been grouped according to the areas to which they are most relevant, namely, oil pollution, operational requirements in respect of oil pollution and compensation for oil pollution damage. Where applicable, the domestic legislation giving effect to the convention is provided.

4.1.1 Oil Pollution

United Nations Convention on Law of the Sea (UNCLOS)

UNCLOS is among the conventions ratified by South Africa. UNCLOS imposes a general obligation on states to protect and preserve the marine environment. It further provides that states shall take all measures to prevent, reduce and control pollution of the marine environment from any source, using for this purpose the best practicable means at their disposal and in accordance with their capabilities.

States, acting through the competent international organisation or general diplomatic conference are required to establish international rules and standards to prevent, reduce and control pollution of the marine environment from vessels and promote the adoption of routeing systems designed to minimise the threat of accidents which might cause pollution of the marine environment, including the coastline, and pollution damage to the related interests of coastal states. Such rules and standards are required to be re-examined from time to time as necessary.

4.1.2 Compensation for Oil Pollution Damage

International Convention on Civil Liability for Oil Pollution Damage, 1992 (CLC)

This convention (originally adopted in 1969) aims to ensure that adequate compensation is available to persons exposed to oil pollution damage resulting from maritime casualties involving oil-carrying ships. It applies exclusively to pollution damage caused in the territory, including the territorial sea, of a contracting state and the exclusive economic zone of a contracting state.

It governs the liability of ship owners for oil pollution damage by laying down the principle of strict liability. The onus is on the owner to prove in each case that any of the exceptions should operate.

It also creates a system of compulsory liability insurance. Ships covered by the convention are required to maintain insurance or other financial security in sums equivalent to the owner's total liability for one incident. The ship owner is normally entitled to limit his liability to an amount which is linked to the tonnage of his ship, as stipulated in the Convention.

The convention applies to all sea going vessels actually carrying oil in bulk as cargo but only ships carrying more than two thousand tons of oil are required to maintain insurance in respect of oil pollution damage. An owner shall not be entitled to limit his or her liability if it is proved that the pollution damage resulted from his or her personal act or omission, committed with the intent to commit such damage, or recklessly and with knowledge that such damage would probably result. The 1992 CLC was adopted by South Africa in 2004.

Marine Pollution (Control and Civil Liability) Act, 6 of 1981

This Act provides for the protection of the marine environment from pollution by oil and other harmful substances. It goes further than the CLC in that it deals with other harmful substances whereas the CLC is limited to oil pollution damage only. The Act provides for criminal as well as civil liability following a discharge which causes pollution of the sea.

While the Act is administered by the Department of Transport, the administration of the provisions of the Act regarding the combating of pollution of the sea by oil were assigned to the then Minister of Environmental Affairs and Tourism (now Minister of Water and Environmental Affairs) with effect from 20 May 1986. Furthermore, many of the administrative functions were transferred to the South African Maritime Safety Authority (SAMSA) in 1998.

An oil spill caused negligently or intentionally falls within the definition of discharge.

The Act sets out the powers of SAMSA to take steps to prevent the pollution of the sea where a harmful substance is being or is likely to be discharged from a ship or a tanker. Such steps include requiring the master or owner of such ship or tanker to unload the harmful substance from the ship or tanker, to dispose of any harmful substance so unloaded or to move the ship or tanker to a place specified by SAMSA. Where the master or the owner of a ship or tanker is not capable of complying with such requirements or cannot reasonably be expected to comply with these, SAMSA may cause such steps to be taken. Furthermore, where any harmful substance is discharged from a ship or tanker, the authority may cause any pollution of the sea caused thereby to be removed.

The owner of any ship, tanker or off-shore installation shall be liable for any loss or damage caused in the area of the Republic by pollution resulting from the discharge of oil, the cost of any measures taken by SAMSA after an incident has occurred for the purposes of reducing loss or damage caused or any loss or damage caused by measures so taken after a discharge has occurred.

The costs referred to shall include an amount deemed by the Director-General to be sufficient to compensate the South African National Foundation for the Conservation of Coastal Birds or any similar organisation approved by the Minister for expenses incurred in treating and rehabilitating coastal birds polluted by oil that has been discharged.

International Convention on the Establishment of an International Fund for Oil Pollution Damage, 1992 (1992 Fund Convention)

This convention establishes the International Oil Pollution Compensation Fund to provide compensation for pollution damage to the extent that the protection afforded by the 1992 CLC is inadequate. It applies exclusively to pollution damage caused in the territory, including the territorial sea of a contracting state and the exclusive economic zone of a contracting state.

South Africa acceded to the 1992 Fund Protocol which amended the 1972 Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage and is accordingly 1 of 103 states for which the 1992 Fund Convention is in force. This Convention has not yet been brought into effect locally. This means that, in monetary terms, South African claimants would be able to recover no more than R 196 million under the present legislation. Once the enabling legislation is passed, a combined total recoverable amount under the two Conventions (CLC and the Fund) would be approximately R 2,85 billion. Therefore it is essential that enabling legislation be passed as soon as possible.

4.1.3 Operational Requirements

The International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL)

South Africa is a signatory to the MARPOL convention which is the main international convention concerning the prevention of pollution of the marine environment from ships by operational or accidental causes. The Convention includes regulations aimed at preventing and minimising pollution from ships and contains 6 technical annexes which set out detailed rules and standards.

Annexure 1 contains regulations for the prevention of pollution by oil and is mandatory for state parties. The discharge into the sea of oil or oily mixtures is prohibited except when certain conditions are satisfied. The Marine Pollution (Prevention of Pollution from Ships) Act 2 of 1986 (discussed below) incorporates the convention and annexure 1 into South African domestic law.

Marine Pollution (Prevention of Pollution from Ships) Act, 2 of 1986 (the MARPOL Act)

The MARPOL Act gives effect to the MARPOL Convention, by providing for the protection of the sea from pollution by oil and other harmful substances discharged from ships. This Act is administered by the Department of Transport.

The Act provides for the Minister to make regulations to give effect to the provisions of the Convention. However this also extends to the Minister making regulations to exempt certain classes of ships from the provisions of the Convention thereby resulting in South Africa not being entirely restricted by the provisions of the Convention.

International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990 (OPRC Convention)

The OPRC Convention is designed to facilitate international cooperation and mutual assistance in preparing for and responding to major oil pollution incidents and to encourage states to develop and maintain an adequate capability to deal with oil pollution emergencies.

Ships flying the flags of contracting states are required to have on board a shipboard oil pollution emergency plan. Operators of offshore units, authorities or operators in charge of sea ports and oil handling facilities must have oil pollution emergency plans or similar arrangements which are coordinated with the national system for responding promptly and effectively to oil pollution incidents.

Ships are required to comply with the oil pollution reporting procedures and the details of the actions to be taken in this regard are set out in the Convention.

The Convention makes provision for parties to cooperate and provide advisory services, technical support and equipment for the purpose of responding to an oil pollution incident and provision is made for the reimbursement of any assistance provided. South Africa has signed this convention, but has not yet brought it into effect locally.

4.2 NATIONAL LEGISLATION (other than that associated with international conventions)

Constitution of the Republic of South Africa Act, 1996

Section 24 of the Constitution states that everyone has a right to an environment that is not harmful to their health or well-being and to have the environment protected for the benefit of present and future generations through reasonable legislative and other measures that

(i) prevent pollution and ecological degradation;
(ii) promote conservation; and
(iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

The argument may be made that in order to give effect to this right, especially as it relates to preventing pollution of the marine environment, reasonable measures must be taken to combat oil spills as well as measures to remedy the effects of spills.

National Environmental Management Act, 107 of 1998 (NEMA)

NEMA is administered by the Department of Environmental Affairs and provides for cooperative environmental governance by establishing principles for decision-making on matters affecting the environment.

One of the most important principles relevant to the oil spill contingency plan is that the costs of remedying pollution, environmental degradation and consequent adverse health effects, and controlling further pollution, environmental damage or adverse health effects must be paid for by those persons responsible for harming the environment.

Section 30 of NEMA is relevant to oil spills as it deals with the control of emergency incidents. An emergency incident is an unexpected sudden occurrence leading to serious danger to the public or potentially serious pollution of or detriment to the environment, whether immediate or delayed.

The responsible person must as soon as reasonably practicable after knowledge of the incident, take all reasonable measures to contain and minimize the effects of the incident, undertake clean up procedures, remedy the effects of the incident and assess the immediate and long term effects of the incident on the environment and public health. A relevant authority (which includes a municipality, a provincial head of department, the Director-General or any other Director-General of a national department) may direct the responsible person to undertake specific measures within a specific time to fulfill his or her obligations in terms of this section.

Should the responsible person fail to comply or inadequately comply with a directive, the relevant authority may take the measures it considers necessary to contain and minimize the effects of the incident, undertake clean-up procedures and remedy the effects of the incident. The relevant authority may claim reimbursement of all reasonable costs incurred in the taking of such measures from every responsible person jointly and severally.

NEMA provides for a Duty of Care that requires reasonable measures to be taken for the prevention of pollution or environmental degradation. This is particularly relevant in dealing with responsibility for oil spill damage. The National Environmental Management: Integrated Coastal Management Act reaffirms this Duty of Care insofar as it relates to the coastal environment. The National Water Act, 36 of 1998 also imposes a similar Duty of Care. Below, we explain the Duty of Care provisions from these acts.

Section 28 of NEMA provides that every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from continuing or in so far as such harm to the environment is authorised by law or cannot be reasonably avoided or stopped, to minimize and rectify such pollution or degradation of the environment.

The steps required by this section include the taking of measures to control any activity causing the pollution, preventing the movement of pollutants, eliminating any source of the pollution or remedying the effects of the pollution.

Where a responsible person fails to take the required measures, the Director-General or a provincial head of department may direct the responsible person to commence taking specific

reasonable measures before a given date and to complete them before a specified reasonable date. If the responsible person fails to comply or inadequately complies with such a directive, the Director-General or provincial head of department responsible for Environmental Affairs may take reasonable measures to remedy the situation or apply to a competent court for appropriate relief. The Director-General or provincial head of department may recover the costs for reasonable remedial measures to be undertaken before such measures are taken and all costs incurred as a result of applying to court for appropriate relief.

Any person may after giving the Director-General or provincial head of department thirty days notice, apply to a competent court for an order directing the Director-General or any provincial head of department to take specific measures for the protection of the environment if the Director-General or provincial head of department fails to inform such person in writing that he or she has directed the person to take such steps.

National Water Act, 36 of 1998

The National Water Act deals with pollution of water resources and also provides for the control of ***emergency incidents***. Following an emergency incident such as an accident involving the spilling of a harmful substance that finds or may find its way into a water resource (water resource is defined to include a watercourse, surface water, estuary or aquifer), the responsibility for remedying the situation rests with the person responsible for the incident or the substance involved.

Measures to be taken by such person include taking all reasonable measures to contain and minimise the effects of the incident, undertaking clean-up procedures and remedying the effects of the incident. Where such person fails to act, the relevant catchment management agency may take the necessary steps and recover the costs from every responsible person. The Act is administered by the Department of Water Affairs.

The National Water Act also provides a duty of care similar to that in NEMA. This however deals more specifically with situations where pollution of a water resource occurs as a result of activities on land.

National Environmental Management: Integrated Coastal Management Act, 24 of 2008

Included among the aims of the Act is the control of dumping at sea and pollution in the coastal zone. The Act provides that in fulfilling the rights contained in section 24 of the Constitution, the state through its functionaries and institutions implementing the Act, must act as a trustee of the coastal zone and must in implementing the Act take reasonable measures to achieve the progressive realisation of those rights in the interest of every person.

The state in its capacity as the public trustee of all coastal public property must take whatever reasonable legislative and other measures it considers necessary to conserve and protect coastal public property for the benefit of present and future generations.

The Minister, an MEC or a municipality concerned may institute legal proceedings or take other appropriate measures to prevent damage or recover damages for harm suffered to coastal public property or the coastal environment or to abate nuisances affecting the right of the public in its use and enjoyment of coastal public property. Accordingly, these provisions can extend to damage caused or measures taken to prevent such damage as a result of oil spills.

This Act also provides that section 28 of NEMA applies to any impact caused by any person that has an adverse effect on the coastal environment. The persons to whom section 28 of NEMA apply include any person who produced or discharged a substance which caused, is causing or likely to cause an adverse effect and this may therefore include discharges from ships.

South African Maritime Safety Authority Act, 5 of 1998
This Act provides for the establishment of SAMSA whose objectives are to ensure the safety of life and property at sea, to prevent and combat pollution of the marine environment by ships and to promote the Republic's maritime interests.

SAMSA may perform a function itself, in co-operating with another person or by delegating or assigning the power or duty concerned to another person. "Person" includes the state, a province, the government or an agency of the government of a foreign country or any juristic or natural person.

Certain functions of SAMSA are performed by the Department of Environmental Affairs. The responsibility for matters relating to the combating of pollution mentioned in Marine Notice No. 2 of 1996 issued by the Department of Transport on 24 January 1996 is regarded as having been assigned to the Department Environmental Affairs by this Act.

The National Health Act, 61 of 2003 (Replaces the Health Act, 63 of 1977)
The National Health Act provides that every local authority shall take all lawful, necessary and reasonably practicable measures to prevent the occurrence, within its district, of any condition which could be harmful or dangerous to the health of any person within its district or the district of any other local authority. Where such nuisance or condition has occurred, the authority must take measures to abate or remedy such condition. Accordingly where an oil spill could be harmful or dangerous to human health, the local authority may take measures to remedy its effects.

The Sea-Shore Act, 21 of 1935
The Sea-Shore Act makes specific provision for the protection of public health. The competent authority to whom the administration of the Health Act has been assigned, may declare that any local authority may exercise, in respect of the sea-shore and the sea situated within its area of jurisdiction or adjoining such area, any of the powers which are conferred by the Health Act on a local authority. This could therefore be extended to include the taking of measures to remedy an oil spill in cases where it could be harmful to human health.

The Minister of Transport may, in terms of this Act, make regulations or authorise any local authority to make regulations concerning the prevention or the regulation of the depositing or the discharging upon the sea-shore or in the sea of offal, rubbish or anything liable to be a nuisance or danger to health.

The Act will be repealed by section 98 of the National Environmental Management: Integrated Coastal Management Act when that section comes into force.

Other Relevant Legislation

The following legislation while not directly applicable in dealing with measures to be taken in cases of oil spills is still of relevance for purposes of the protection of the marine environment from oil spills.

Merchant Shipping Act, 57 of 1951
SAMSA is responsible for the administration of this Act. The Act imposes an obligation on an owner of a ship to secure the sea worthiness of a ship. Unseaworthy ships may be detained and where any ship is detained, it may be inspected by a surveyor who shall report on any supposed defects or deficiencies.

Dumping at Sea Control Act, 73 of 1980
This Act brings into force domestically the provisions of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (the London Convention). It provides for the control of dumping at sea of various substances and structures, including vessels, platforms or other man-made structures.

South Africa is a signatory to the 1996 Protocol, which will eventually replace the current Convention. The Protocol introduces the precautionary and polluter pays principles and expands the objectives of the Convention to include the elimination of pollution where practicable.

The Act is administered by Department of Environmental Affairs. It will however be repealed by section 98 of the National Environmental Management: Integrated Coastal Management Act when that section comes into force.

Marine Pollution (Intervention) Act 64, of 1987
This Act gives domestic effect to both the Intervention Convention Relating to the Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 as well as the Protocol Relating to Intervention on the High Seas in Cases of Marine Pollution by Substances other than Oil, 1973. It allows the Minister of Transport to make regulations to give effect to the provisions of the Convention and the Protocol.

Disaster Management Act, 57 of 2002
This Act provides for, among others, an integrated and co-ordinated disaster management policy that focuses on preventing or reducing the risks of disasters, mitigating the severity of disasters, emergency preparedness, rapid and effective response to disasters and post-disaster recovery.

Disaster is defined in section 1 of the Act as "Is of a magnitude that exceeds the ability of those affected by the disaster to cope with its effects using only their own resources" and could presumably include oil spills. The Act not only addresses the occurrence of a disaster, but also makes provision for the "threat of" a disaster, i.e. potential disaster.

The Act does not however apply to a disaster where such occurrence can be dealt with effectively in terms of other national legislation aimed at reducing the risk, and addressing the consequences of occurrences of that nature and identified by the Minister by notice in the Gazette. Accordingly, this Act would not be of direct application in cases of oil spills as the other Acts related to oil pollution response, provide measures that can be enforced in dealing with oil spills.

The Public Finance Management Act, 1 of 1999

This Act regulates financial management in the national government and provincial governments and ensures that all revenue, expenditure, assets and liabilities of these governments are managed efficiently and effectively. It provides for the establishment of a national treasury consisting of the Minister who is the head of treasury and the national department or departments responsible for financial and fiscal matters.

While the Act is not directly relevant to procedures in the event of oil spills, the Minister or MEC for finance in a province may authorize the use of funds from the respective national revenue fund or provinces provincial revenue fund respectively to defray expenditure of an exceptional nature which is not currently provided for and which cannot, without serious prejudice to the public interests be postponed to a future appropriation of funds. Thus in particular circumstances additional budget could possibly be allocated in cases of oil spills that threaten the public interests.

Municipal Finance Management Act, 56 of 2003

All expenditure by municipalities is regulated by this Act.

National Ports Act, 12 of 2005

This Act relates to the establishment of the National Ports Authority and the Ports Regulator; to provide for the administration of certain ports by the National Ports Authority; and to provide for matters connected therewith. The Authority is required in the performance of its functions to ensure that a fair and reasonable balance is achieved between the protection of the environment and the establishment, development and maintenance of ports.

4.3 RESPONSIBLE AUTHORITIES

4.3.1 South African Maritime Safety Authority (SAMSA)

SAMSA was established on 1 April 1998 in terms of the South African Maritime Safety Authority Act, 5 of 1998 and it is accountable to the Minister of Transport. Its mission is to promote South Africa's maritime interests and development and position the country as an international maritime centre while ensuring maritime safety, health and environmental protection.

The responsibility for matters relating to the combating of pollution however, mentioned in Marine Notice no. 2 of 1996 issued by the Department of Transport on 24 January 1996, is regarded as having been assigned to the Department of Environmental Affairs by the Act.

Included among the services provided by SAMSA are accident investigations and emergency casualty response, management of the Department of Transport contracted pollution prevention and response capability, statutory surveys and safety certification of ships, inspections of ships and cargos of hazardous goods, casualty investigation and management, oil pollution incident response and investigation, and providing a maritime search and rescue capability in the South African area of responsibility through the management, on behalf of the Department of Transport, of the Maritime Rescue Coordination Centre.

The South African Maritime Safety Authority Act establishes SAMSA as a juristic person. It may perform its functions both within and outside the Republic and it may do so by itself, in cooperation with another person or by delegating or assigning a power or duty concerned to another person (including the state, a province, the government or an agency of the government of a foreign country or a juristic or natural person). SAMSA also has the power to institute and conduct civil proceedings in all matters relating to its functions.

4.3.2 Transnet National Ports Authority (TNPA)

The main functions of the TNPA are to own, manage, control and administer ports to ensure their efficient and economic functioning. This includes regulating and controlling pollution and the protection of the environment within the port limits.

The TNPA may give notice to the owner or other person legally responsible for the upkeep of any vessel within port limits to remove or otherwise dispose of such vessel, or part thereof, which is not seaworthy or is likely to become an obstruction, wreck or derelict or a threat to the environment or public safety. It may also recover from that owner or person all costs incurred for the removal or disposal should he or she fail to comply with such notice within the time specified therein.

The Harbour Master is, in respect of the port for which he or she is appointed, the final authority in respect of all matters relating to the movement of vessels within port limits. Accordingly the Harbour Master may give such written or verbal instructions for the detention of a vessel reasonably suspected of causing oil pollution in the port area and ensuring that the total cost of the pollution clean–up operation is recovered, or acceptable guarantees are provided, prior to the vessel being giving permission to leave the port.

The TNPA may with the approval of the Minister of Transport make rules for the control and management of ports and for the maintenance of safety, security and good order in ports, in particular regarding the protection of the environment within ports, the cleaning of land and waters of the ports and the prevention of oil, filth, rubbish or any other matter from being thrown into the sea.

Port Rules

The TNPA has developed Port Rules in terms of the National Ports Act, which came into effect on 6 March 2009. Chapter 4 of the port rules deals with the protection of the environment and provides that all persons within a port must take all reasonable steps to prevent, minimize and mitigate pollution or degradation of the environment.

Any person who pollutes or causes damage to the environment will bear the costs associated with the combating and cleaning up of that pollution, damage or degradation and the associated impacts relating thereto.

Furthermore, no oil may be discharged or dumped from a vessel or be allowed to escape from a vessel into any part of the port. The clean up of pollutants, including oil, which is spilled within port limits must be dealt with in accordance with the applicable Port Contingency Plan.

4.3.3 Department of Environmental Affairs

The Marine and Coastal Pollution Management section of the Department of Environmental Affairs is responsible for, among others, combating pollution incidents, and cleaning up of spills. The Department may also issue directives in terms of the NEMA requiring pollution and degradation to be remedied including the undertaking of clean-up procedures.

In terms of the Policy on the Use of Oil Spill Dispersants in South African Waters, the decision to use oil spill dispersants should only be taken by the Department Environmental Affairs. In the event of a spill incident, the Department's On-Scene Co-ordinator, in consultation with the scientific advisors, should only decide to use oil spill dispersants if such use will minimize the overall environmental impact.

Oceans and Coastal Conservation (O&C) is one of the four branches of the Department and it is a regulatory authority responsible for managing all marine and coastal activities. O&C has invested in the development of an oil spill response capability. This allows equipment and man-power to be mobilised at short notice to protect beaches, estuaries, bird colonies and other sensitive areas.

Provincial Departments of Environmental Affairs, such as DEDEA (Eastern Cape), DEA&DP (Western Cape) and DAEARD (in KwaZulu-Natal) have concurrent powers with the DEA in terms of environmental responsibilities.

4.3.4 Municipalities

Municipalities also have an important role to play in dealing with oil spills. There exist provisions in South African law that can be invoked to enable municipalities to take appropriate measures in dealing with oil spills.

In terms of the provisions of NEMA dealing with emergency incidents, a relevant authority, which includes a municipality, may direct that specific measures be taken. Where the responsible person fails to comply or inadequately complies with a directive or there is an immediate risk of serious danger to the public or potentially serious detriment to the environment, the municipality may take the measures it considers necessary and claim reimbursement of its reasonable costs incurred from the responsible persons. Such measures would include undertaking clean-up procedures and remedying the effects of the incident.

The National Environmental Management: Integrated Coastal Management Act makes provision for a municipality to institute legal proceedings or take other appropriate measures to prevent damage suffered to coastal public property or the coastal environment. The Health Act also requires local authorities to take measures to prevent the occurrence of any condition which could be harmful or dangerous to the health of any person.

A municipality may also be directed to take specified measures to prevent or remedy adverse effects on the coastal environment in terms of the National Environmental Management: Integrated Coastal Management Act. Where the MEC is satisfied that the municipality is not taking adequate measures, he or she may in writing direct a municipality to take specified measures. Where the municipality does not comply with this directive, the MEC may take measures to prevent or remedy the adverse effects.

4.3.5 South African National Parks (SANParks)

The National Environmental Management: Protected Areas Act, 57 of 2003 provides for the continued existence of SANParks which was established by the National Parks Act, 57 of 1976. SANParks manages all existing national parks as well as various types of protected areas including marine protected areas assigned to it by the Minister. Included among SANParks's functions is to protect, conserve and control the national parks and other protected areas assigned to it, including their biological diversity. SANParks functions would be relevant in relation to oil spills insofar as they relate to marine protected areas.

4.3.6 Provincial Nature Reserves

Provincial Nature Reserves are managed in accordance with Provincial Ordinances, as well as the National Legislation listed above. Their functions are to protect, conserve and control the protected areas, especially in terms of biological diversity.

5. FINANCIAL ARRANGEMENTS AND COMPENSATION OF COSTS

South Africa's National Contingency Plan for Prevention and Combating of Pollution from Ships states: "Any response arising from a shipping casualty, whether an intervention of sorts, or an actual clean up exercise, can be very costly and the Republic has no dedicated state pollution contingency fund in place. Initially the costs of such operations fall to those involved in the operations and in line with the "polluter pays" principle may subsequently be claimed as costs and damages from the owner. It is however accepted that small service providers cannot be expected to carry the costs of providing services to the state for any (length of) time and SAMSA, as the responsible authority will assist in enabling a response to get under way, by way of underwriting such actions as it considers necessary in the early phases of any response. This undertaking is severely limited and a better arrangement regarding underwriting the costs will have to be made in the event."

If response operations, as covered by this Plan, are centrally co-ordinated, professionally carried out, cost-efficient and effective, well documented and fully integrated with overall response activities, they have a good chance, in principle, to qualify for compensation of costs incurred. Close liaison with insurers, through SAMSA and DEA, from the start of the response operation is essential. So it is imperative that local authorities participate in the discussions of the Joint Response Committee (JRC) which is chaired by SAMSA during a major shipping incident.

South Africa has acceded to the CLC92 and Fund 1992 Conventions, and through SAMSA has access to claiming protocols of up to approximately R 2.85 billion once enabling legislation is passed. Until then the limit is set at approximately R196 million.

Identifiable Source

In many cases the source of the spill will be identified and the vessel will have P&I Club (3rd Party) insurance cover. This will make the recovery of costs and damages a strong probability, especially if the claims are reasonable and any expenditure has been properly audited and controlled. In the event of the source of oil pollution being identified, the Minister of Transport may require the owners/insurers to establish a fund from which claims can be paid. As soon as possible, DEA should provide SAMSA with an estimation of costs for protection and clean-up operations so that this can be included in the guarantee. Local Authorities should inform DEA of any major costs at the outset and they should be kept updated on costs as they are incurred. It is important to bear in mind the limitation of liability regime that is in place in South Africa. This means that the sum total of costs may therefore not be met in full.

It is quite possible however that there might be no response from the owner and any interventions and clean-ups must be carried out nevertheless. These actions need to be tempered, however, with the reality that these costs may not be recoverable from the owner and that the state would need to be approached for compensation. SAMSA will make every effort to secure assets or funds associated with the owner in cases such as this in order to mitigate the cost to the state.

Source not identified

If the source of the oil spill is not identified, the cost of clean-up may have to be borne by the State, and SAMSA will approach Treasury for an advance of funds. However, if it can be proved that the oil is a crude oil then compensation can be sought through IOPC. It would therefore be necessary for samples of the oil, or oily sand to be collected for analysis. DEA/SAMSA is responsible for undertaking the oil finger printing analysis. The number of samples taken will depend on the extent of the spill and the requirements of the insurers. A guide on the collecting and storing of samples is provided in Addendum E.

5.1 POLICY ON PURCHASING

In normal circumstances prior approval of the Department of Environmental Affairs is required for the purchase or hire of anything by Local Authorities for which recompense is to be sought. However, in the interests of continuity of an operation where the resources of Local Authorities are insufficient to prevent or remove oil pollution, the Area Controllers (see Section 8.4.2) may, within reasonable limits, purchase or hire additional equipment, purchase consumable materials, employ additional labour or engage the services of contractors without such prior approval, but are to advise the DEA Shore Controller or the JRC immediately of such acquisitions. The purchase of capital equipment may, however, only be undertaken after approval through the JRC.

NOTE:
The attention of the Area Controller is drawn to the terms of Sections 5(5) and 5(6) of Act 6 of 1981, entitling the Minister of Transport to enquire into the reasonableness of costs incurred and claims made.

5.2 CLAIMS

The Claims Manual produced by IOPC (April 2005) provides specific information on claiming procedures. The main points are summarised below.

5.2.1 Loss or Damage

All claims for loss or damage shall be submitted to the DEA On-Scene Co-ordinator, who will take the necessary steps to establish that the claim is adequately substantiated and reasonable. Once the details of each claim have been verified, it will be forwarded to the SAMSA Administration Officer for processing.

These claims could include loss or damage to property, grazing lands, livestock, fishing nets, loss of livelihood etc., in the area of the Republic, resulting from the discharge of oil from a ship, tanker or offshore installation and also damage or loss caused by methods used to clean up polluted areas. All claims made must be submitted according to the requirements listed in Appendix I, where an expenditure log sheet template is also provided.

Depending on the nature of the claim, the following information may be required:

- Nature of loss, including evidence that the alleged loss resulted from the contamination.
- Monthly breakdown of income for the period of the loss and over the previous three years.
- Where possible, monthly breakdown of units (eg kilograms of fish caught and sold or number of hotel rooms let etc) for the period of the loss and over the previous three years.
- Saved overheads or other normal variable expenses.
- Method of calculation of loss.

5.2.2 Measures Taken

Claims for costs of measures taken in respect of protection from, and clean-up of oil pollution are to be submitted to the DEA On-Scene Co-ordinator and are to be fully substantiated by detailed time sheets for labour and machinery, and invoices for material and equipment purchased. Justification for the action taken must be included. It is essential that costs are well documented and that stringent records of expenditure are maintained. Claims should answer the questions: **Who? What? Where? When? and Why?** A brief summary report outlining the nature of the incident and the associated activities should be provided with the claims.

The following information should be provided:

- Delineation of area affected, describing the extent of the pollution and identifying those areas most heavily contaminated (maps, charts, photographs and video tapes).
- Analytical or other evidence linking the oil pollution with the ship (chemical analysis, relevant wind, tide and current data, observation and plotting of oil movement).
- Summary of events, including description and justification of work carried out at sea, in coastal waters and on shore, together with an explanation of why the various methods were selected.
- Dates on which work was carried out at each site.
- Labour costs at each site (number and categories of response personnel, name of employer, hours or days worked, regular or overtime rates, and other costs).
- Travel, accommodation and living costs for response personnel.
- Equipment costs at each site (types of equipment used, by whom supplied, rate of hire or cost of purchase, method of calculation of hire rates, quantity used, period of use).
- Cost of replacing damaged equipment beyond reasonable repair (type and age of equipment, original purchase price, and circumstances of damage, supported by photographs etc).
- Consumable materials (description, by whom supplied, quantity, unit cost and where used).
- Any remaining value at the end of the operations, of equipment and materials purchased specifically for the incident.
- Transport costs (number and types of vehicles, vessels or aircraft, number of hours or days operated, rate of hire or operating cost, method of calculating rates).
- Cost of temporary storage and of final disposal of recovered oil and oily material, including quantities disposed, unit cost and method of calculating the claimed rate.

5.2.3 Claims for environmental reinstatement measures and post spill studies.

In some instances it is possible to enhance the speed of natural recovery after a spill, through reasonable re-instatement measures. The cost of such measures may be accepted for compensation by the IOPC under certain conditions.
Such measures should:

- accelerate significantly the natural process of recovery;
- seek to prevent further damage as a result of the incident;
- not result in degradation of other habitats or adversely affect other natural or economic resources;
- be technically feasible;
- not result in costs being out of proportion to the extent and duration of the damage and the benefits likely to be achieved.

The IOPC Fund may contribute to the cost of studies to determine the nature and extent of environmental damage caused by an oil spill or to determine whether reinstatement measures are necessary. Usually this would be appropriate for major incidents only, and if the studies are likely to provide reliable and useful information. Strict conditions apply; the IOPC should be consulted at an early stage, and a scientific committee should be established to co-ordinate such studies.

5.2.4 Checklist for oil spill claims procedure

Item	Responsibility	Check
Identification of vessel owner/insurer	SAMSA	
Determine level and details of insurance	SAMSA	
Analysis of spilled oil. Crude oil / bunker oil?	SAMSA, DEA	
Owner/Insurer guarantee secured	SAMSA	
SA Treasury funding request (if no insurance cover)	SAMSA/DEA	
Owner/Insurer requested to attend JRC	SAMSA	
Response activities agreed at JRC	SAMSA, DEA, Owner/Insurer, Stakeholders (local authorities)	
Record of decision signed (template in Appendix V)	SAMSA, DEA (Insurer can be asked to sign, but not essential)	
Keep strict records of all activities undertaken. "Who? What? Where? When? Why?" (see Appendix I)	Each Claimant: SAMSA, DEA, Stakeholders (local authorities and individuals)	
Maintain file of all invoices and receipts	Each Claimant: SAMSA, DEA, Stakeholders (local authorities and individuals)	
Compile summary claim report	All Claimants: SAMSA, DEA, Stakeholders (local authorities and individuals)	
Submit claim to DEA for verification (to include summary report, record of activities and copies of invoices and receipts)	All claimants: Stakeholders (local authorities and individuals)	
Verification of all local authority and individual claims	DEA	
Compilation of summary claim report for environmental response.	DEA	
Approved claims submitted to SAMSA	DEA	
Claims submitted to Owner/Insurer or Treasury	SAMSA	
Negotiations and discussions of claims with Owner/Insurer or Treasury	SAMSA, DEA, Owner/Insurer, Treasury	
Payment of claims	Owner/Insurer, Treasury	

6. PREPARATORY ACTIVITIES

6.1 DEPARTMENT OF ENVIRONMENTAL AFFAIRS

The Deputy Director: Marine and Coastal Pollution Management and his delegated Marine Pollution Officers, marked with an (*) in Section 7.1.3, are responsible for the preparation, improvement and updating of the Local Coastal Plans on an ongoing basis. In addition, they must ensure that the departmental organisation is maintained at a sufficient state of readiness to cope with an incident, and also be available to assist the Local Authorities with training activities when so required. Concurrent powers are held by the Provincial Departments of Environmental Affairs.

6.2 MUNICIPALITIES / LOCAL AUTHORITIES

The Local Authorities in this area have nominated the Manager: Aquatic Safety, eThekwini Municipality, to act as the Local Authority Co-ordinator, during an oil spill incident in this area (see Section 8.4.1 for job description). In addition to his/her duties during a spill, this officer will be responsible on an ongoing basis for ensuring that the Local Authorities in this Zone are fully prepared to respond to an oil spill incident. He/she therefore has to be fully conversant with this plan, and must ensure that information regarding equipment and material, telephone numbers etc, is kept up to date. His contacts within the Department of Environmental Affairs are the Marine Pollution Officers in Cape Town.

For each of the protection measures set out in Section 10, the relevant Local Authority must compile a plan detailing how the task can be completed in the shortest possible time. The authorisation for the release and allocation of emergency funds is an important factor to be considered during the planning process. Detailed plans are also required for clean-up operations if these are unique. The Department of Environmental Affairs (Marine Pollution Officers) will assess the viability of these proposed plans in relation to the availability, quantity and effectiveness of the materials, equipment and labour readily available, and make recommendations where necessary. The plans, once accepted, will then form part of this Coastal Oil Spill Contingency Plan.

6.3 TRAINING AND EXERCISES

The Department of Environmental Affairs is responsible for ensuring that training is undertaken by those organisations involved in carrying out this Contingency Plan. Without such training, the plan has little value. The Marine Pollution officers shall be trained to the relevant levels commensurate with their roles and responsibilities, as recommended in the table below.

Responsible officer	Role	Training
Deputy Director and Assistant Director: Marine and Coastal Pollution Management	On-Scene Co-ordinator	IMO Level 2/3 – Response to Marine Oil Spills: Course for On-Scene Commanders and Executive Commanders (having completed previous levels).
Pollution Officers	Shore Controller, Env. Liaison Officers	IMO Level 2 – Response to Marine Oil Spills: Course for On-Scene Commanders. Ability to control and put a specific contingency plan into action (having completed previous levels).
Pollution Officers, Pollution Technicians and Artisans	Logistics Officers, Beach supervisors,	IMO Level 1 – Ability to act as shoreline clean-up supervisor/beachmaster. IMO foundation level – Basic use of Tier 1 sorbents, booming and recovery techniques and understanding contingency plans.

Table showing level of training for DEA: Marine Pollution Officers

Local Authorities are required to ensure that persons appointed to the various tasks are familiar with their responsibilities, duties, powers and to whom they will be accountable during the incident. Enquiries regarding training should be addressed to the DEA (Marine Pollution Officers).

Simulated exercises are an excellent way to test the effectiveness of this Plan and train personnel in the emergency roles. In the absence of any large spill, DEA is committed to undertaking a desk-top exercise once a year to ensure that managers and responsible officers are aware of the procedures and response strategies incorporated in this Plan. Exercises will be arranged to test some or all of the following: call out procedures, contact details, equipment supply lists, setting up the response organisation and facilities, communications, media liaison and relationships with other authorities.

DEA will also commit to assist local authorities with training exercises in their respective zones. Bearing in mind that there are 25 Zones, it is prudent for DEA: Marine Pollution Officers to aim towards arranging or participating in training exercises every second year in each of the zones. These could take the form of desk-top exercises, video assisted training or clean-up/boom deployment exercises on the shoreline. By selecting one Zone and its neighbours for one trip, it may be a good idea to undertake a video training event in one Zone, a booming exercise in a neighbouring Zone and a desktop exercise in the other neighbouring Zone. By extending invitations to local authorities in all three zones, role players would have the opportunity to partake in various training events.
The proposed training exercise schedule is provided in the table below.

Time frame	Type of exercise	Participants
Every Year	Desk Top Exercise	DEA:O&C and invited partners
Year 1	Desk Top Exercise or Video Training or Beach cleanup or booming	Local authorities and associates in the following zones: West Coast, Swartland, Cape, Caledon (Overstrand); Humansdorp, Dias, Amathole, Scottburgh, Durban and Ballito.
Year 2	Desk Top Exercise or Video Training or Beach cleanup or booming	Local authorities and associates in the following zones: Agulhas, Langeberg, Mossel Bay, Knysna, Transkei, Port Edward, Margate, Port Shepstone Pennington, Lower Tugela, Tugela, Richards Bay and St Lucia.
Every 5 years	National exercise in one of the Zones to tie in with major revision of the Contingency Plans.	DEA:O&C, SAMSA, TNPA; and relevant local authorities

Table showing schedule for proposed training exercises.

Full debriefing sessions following the exercises should be undertaken in order to highlight deficiencies, improve or update this Contingency Plan. Lessons learnt should be shared with other local authorities.

An exercise and training template is provided in Appendix III and should be completed accordingly.

7. INITIAL REPORTING AND ACTIVATION OF THE PLAN

The initial procedures during an oil spill incident are of the utmost importance, since they can determine the success or failure of the response operation. It is essential that accurate information is obtained and that key personnel are notified accordingly.

All oil spills at sea are to be reported to SAMSA and DEA Marine and Coastal Pollution Management (MCPM). Oil spills on the shoreline, or oiled seabirds must be reported to DEA: MCPM, who in turn will notify SAMSA. If the coastline or seabirds are likely to be effected, MCPM will notify the Local Authorities and SANCCOB accordingly. The notification regime is illustrated in figure 2 below.

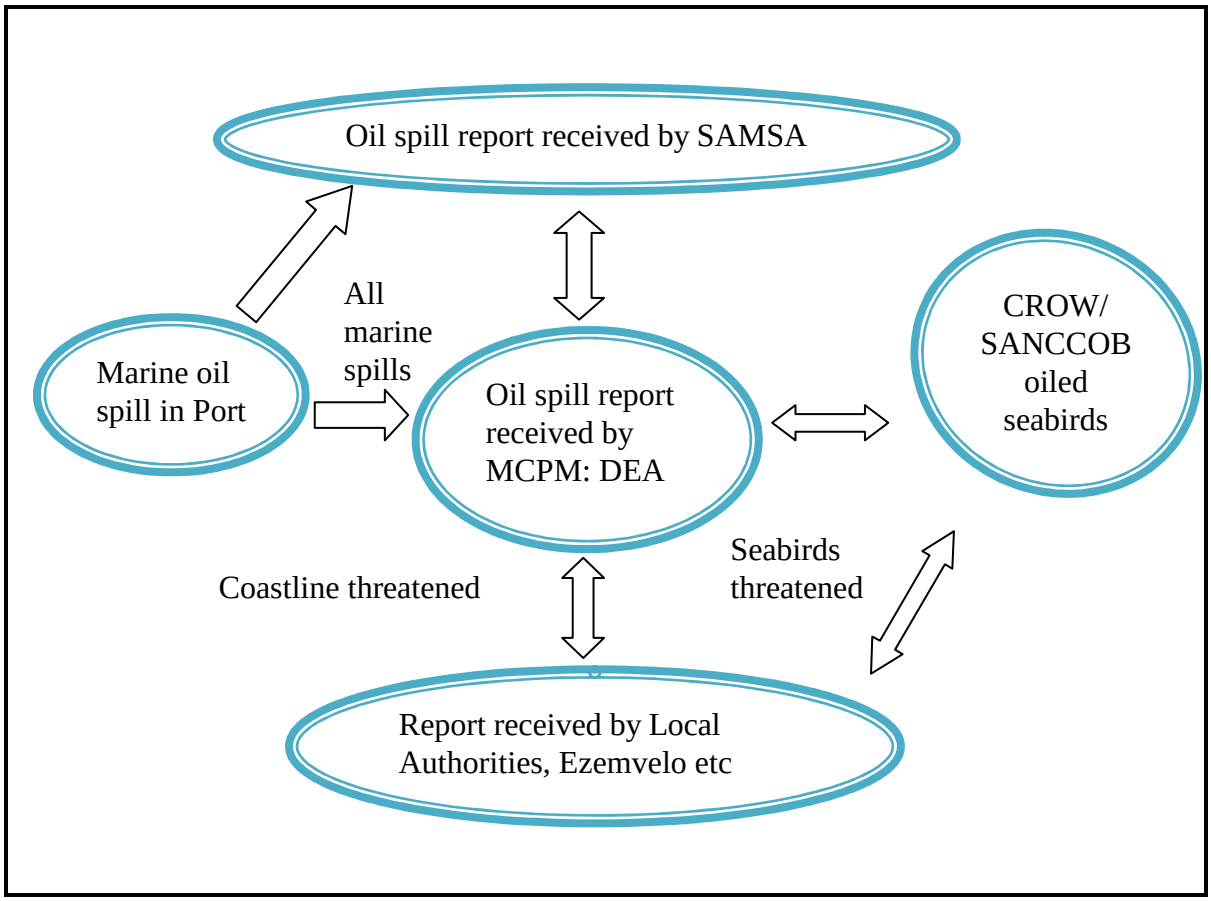


Figure 2: Requirements for initial reporting of oil spills.

7.1 REPORTING OF OIL SPILLS

The first indication of an oil spill may come either from a report from a vessel or the sighting of an oil slick at sea, or from an observation of stranding or stranded oil.

7.1.1 Initial Reports by Local Authorities

Stranding or stranded oil and in some cases a sighting of oil at sea may be reported directly to Local Authorities. On receipt of such a report, the Local Authority should make an immediate investigation to obtain as much information as possible. Having assessed the validity of the report, the Local Authority is to inform the **DEA Pollution Officers** listed in Section 7.1.3. An incident report form to be used by the local authority is provided below

If contact cannot be made with any of the DEA Pollution Officers, then the Local Authority must make contact with one of the SAMSA Officers following the sequence listed. Failing this the **eThekwini Municipality's Disaster Management Control Centre** should be contacted.

LOCAL AUTHORITY OIL SPILL INCIDENT REPORT FORM

Date and Time of Spill, or Spill Sighting .....

Reported by: NAME:…..……..... TEL: .....…….

Reported to: NAME…….... TEL: .....

Officer Responding: NAME:……..... TEL: .....…..

Precise location of where oil was seen: (e.g. name of beach or geographic co-ordinates)

.....

Description of location: (e.g. sandy beach/rocky shore, amenity value, environmental sensitivity etc)

.....

Extent and nature of oiling: (e.g. length, breadth, thickness, % area covered, tar balls, fresh liquid oil, penetration into the sand, colour etc)

.....

Estimated wind speed and direction: .....

Estimated quantity of oil spill.

less that 50 litres	50 to 100 litres	100 to 1000 litres	1 to 7 tonnes	7t to 70 t	more than 70 t

Cause of spill (if known): …….....…….....

Response required: | sorbents | booms | skimmers | manpower | beach clean-up, other..... |

Comments:

7.1.2 Initial Reports by Department of Environmental Affairs

In the event of SAMSA or the Department of Environmental Affairs receiving a report from a vessel or a report of a sighting of an oil slick at sea, they will assess the probability of the shoreline being impacted by oil. If such a threat exists the Department of Environmental Affairs will endeavour to determine:

- the stretch of coastline likely to be impacted,
- the probable time of the initial impact,
- the anticipated magnitude of the impact.

In the event of a major spill, the Department of Environmental Affairs will alert the Disaster Management Centre of the eThekwini Municipality, who in turn will alert (see Section 7.2.2) the Local Authorities who have jurisdiction over the coastline under threat of impact. The DEA Pollution Officers should follow up the notification process to ensure that all relevant local authorities have been advised.

The threat situation will be under constant review and the Local Authorities will be advised of each revision, by the DEA Deputy Director: Marine and Coastal Pollution Management, or his delegated officer.

Should the Department of Environmental Affairs receive the initial report of stranded oil, it will either send one of its own officers, or, when there is no such officer in the vicinity, request the appropriate Local Authority to verify such report before proceeding further. If necessary, aerial surveillance will be initiated by the DEA OSC. The initial response actions are illustrated in the diagram below (Figure 3).

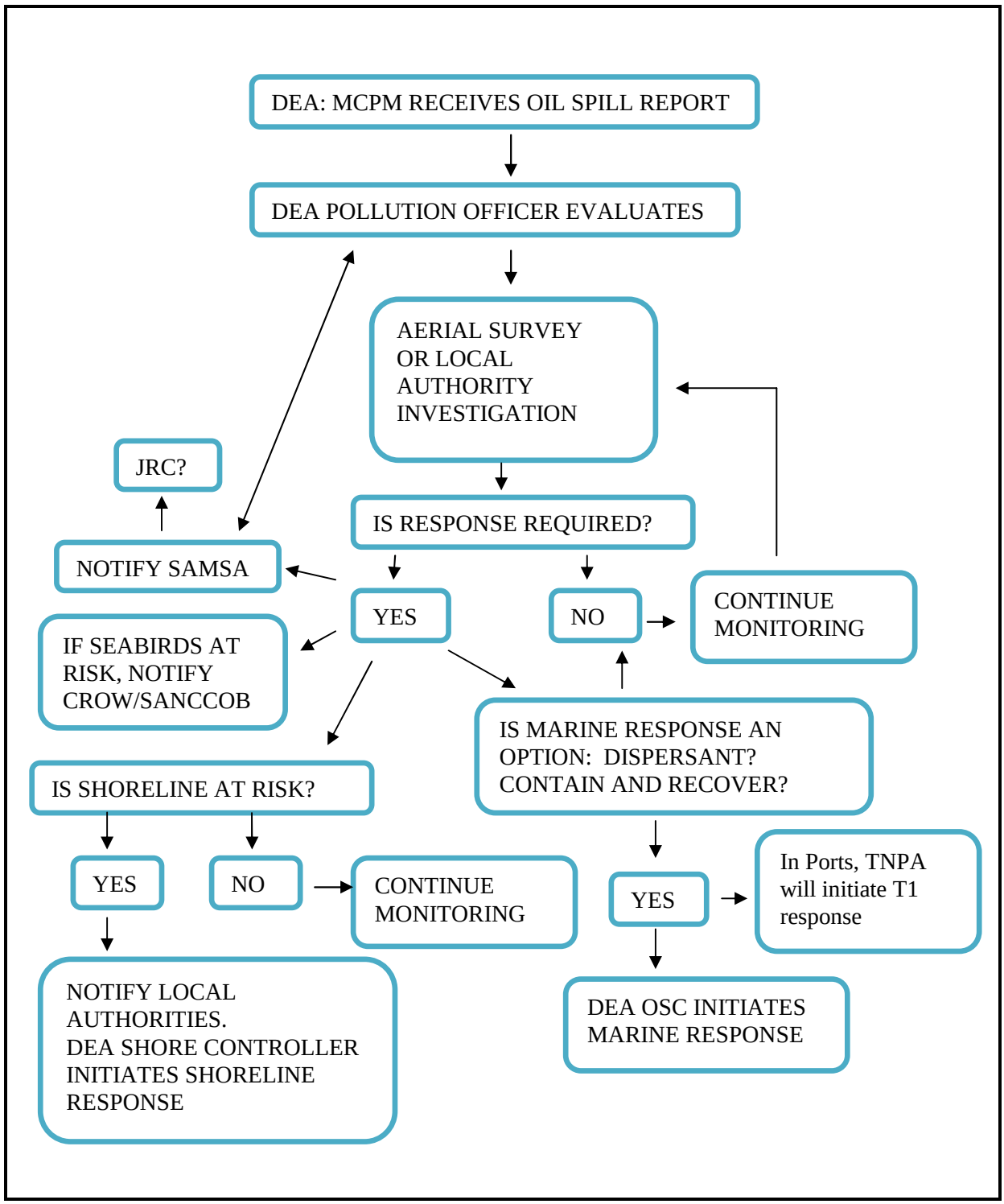


Figure 3: **Diagram illustrating initial DEA response actions.**

7.1.3 Initial Report Call Numbers

TELEPHONE LIST FOR REPORTING OIL SPILLS

Organisation	Office Tel	Fax	Cell
DEPARTMENT OF ENVIRONMENTAL AFFAIRS: MCPM			
* Marine Pollution Officers:			
Dr Yazeed Petersen (DD)	021 819 2450	021 819 2445	083 530 3127
Feroza Albertus-Stanley (AD)	021 819 2457	021 819 2445	072 173 6234
Marine Pollution Officer	021 819 2491	021 819 2445	074 800 4792
SAMSA			
EASTERN REGION.		086 616 3205	
Capt. Saroor Ali	031 307 1501	031 306 4983	071 686 9593
Durban:		086 615 7055	
Mr. Grant Conway	031 307 1501	031 306 4983	082 449 6350
Richards Bay			
Thandi Mehlo (PO)	035 788 0082/68	035 788 0067	082 492 4404
SOUTHERN REGION			
Capt N. Campbell	041 582 2138	041 582 2130	083 309 6053
East London		086 615 8659	
Capt P Kroon (PO)	043 722 4120	043 722 2264	082 445 3166
Port Elizabeth:		086 616 3205	
Mr B Colenutt (PO)	041 585 0051	041 582 1213	082 445 3167
Mossel Bay		086 616 3370	
Mr. Dave Manley	044 690 4201	044 691 1206	082 477 1813
WESTERN REGION			
Capt Dave Colly	021 421 6170	021 419 0730	082 812 2997
Cape Town:		021 419 0730	083 227 0721
Capt G Louw	021 421 6170	086 696 9074	
SAMSA: Maritime Rescue Co-ordination Centre MRCC			
24 Hours Operation 021 938–3300	24 Hours Operation	021 938 -3309 Fax	
Mr A Botes	021 938 3310	086 616 4415	083 254 2944
		021 938 3319	
Head: Centre of Sea Watch		086 654 4742	
Mr. Karl Otto	021 938 3317	021 938 3319	082 812 2991
Duty Controller (all hours)	021 938 3300	021 938 3309	
eThekwini Municipality: Disaster Management Control Centre			
24 hours Emergency (JOC)	031 361 0000		

7.2 LEVELS OF RESPONSE AND ACTIVATION

In this Plan, the combating response shall be organised according to the following levels of response as described in the National Plan and illustrated in the diagram below:

a) A **Tier 1** response is where the containment, clean-up and rescue of contaminated fauna can be dealt with within the boundaries of the vessel, berth or a small geographical area; where the incident has no impact outside the operational area but poses a potential emergency condition. Such an incident covers a small spill that can be contained and cleaned-up by the ship, terminal, port, or local authority staff using their own resources. The most common type of Tier 1 response deals with an incident occasioned during a ship bunkering operation or a small quantity of oil from an unknown source impacting the shoreline.

b) A **Tier 2** response is where the nature of the incident puts it beyond the containment, clean-up and rescue of contaminated fauna capabilities of the ship, terminal operator or the Local Authority. The containment or clean-up requires the use of some of or all the government and industry resources. It could be near or some distance from operational centres. The incident is usually associated with shipping activities in ports or harbours, coastal waters, pipelines, tank failures or near shore explorations and production operations.

c) A **Tier 3** response is where the nature of the incident puts it beyond containment, clean-up and rescue of contaminated fauna capabilities of a national or regional response. It is usually a large spill which has the probability of causing severe environmental and human health problems. The response will require assistance from outside the country. Such an incident becomes a major international affair involving a number of aspects of government. When responding to an incident of this nature, strategies outlined in the National Plan should be engaged.

The Tiered Response *(from IPIECA)*

Large spill			TIER 3
Medium spill		TIER 2	
Small spill	TIER 1		
Response required	Local	Regional/ National	National/International

In reality, spills do not fall into convenient categories. It is therefore important to be prepared to initiate at the higher tier as soon as possible, as it is easier to stand down an alerted system than to try to escalate a response at the last moment.

7.2.1 Department of Environmental Affairs Response

Once the Department of Environmental Affairs has assessed the initial report, and found it necessary to initiate a response, the organisational structure outlined in Fig. 4 (Section 8.1) will come into effect. The functions of the officers concerned are described in Section 8.2.

7.2.2 Local Authorities Response

If, during the evaluation of the spill by the Department of Environmental Affairs, it is established that there is a threat to the coastline, the Department will inform the relevant Local Authorities accordingly. The sequence of steps that will take place and activities required of Local Authority Officers are described below and in Section 8.4. Their relationship to the Department of Environmental Affairs is described in Section 8.3.

ALERT - If a threat is present, but not imminent, the Department of Environmental Affairs will request the Local Authorities to inform their key personnel (i.e. those who may be involved) who are to remain contactable. SAMSA, in consultation with DEA will decide whether it is appropriate to assemble a Joint Response Committee

MOBILISATION - As the threat draws closer, the Local Authorities will be requested to begin moving equipment, materials and labour onto site.

IMPLEMENTATION - As the impact of oil becomes imminent, the Department of Environmental Affairs will authorise the deployment of equipment, labour and materials.

If the Local Authority feels the implementation of specific protection measures cannot be delayed, authority to proceed can be obtained from the Dept. of Environmental Affairs by telephone. It must then be confirmed later by fax or email to the Dept. of Environmental Affairs, quoting date, time, person contacted, and action implemented. If difficulty is encountered in contacting the Dept. of Environmental Affairs such requests may be channelled through SAMSA or the Disaster Management Centre of the eThekwini Municipality.

REVIEW - Local Authorities are to review the clean-up operations continually, to ensure that the operations being carried out are cost effective. The Department of Environmental Affairs or the Joint Response Committee, will continually review the overall threat situation, re-evaluate the response decisions, and advise the Local Authorities accordingly.

TERMINATION - Once the threat has passed, the Department of Environmental Affairs will decide, through the Joint Response Committee, at what stage the clean-up operations will cease and the protective works that were installed can be removed.

8. ORGANISATION

8.1 DEA and SAMSA ORGANISATION

The DEA Oil Spill Response Organisation and its linkage to SAMSA are presented schematically in Figure 4 below. This organisation is only effective for the duration of an oil spill. Depending on the spill scenario, individual personnel will undertake each of the following functions:

- DEA On-Scene Co-ordinator
- DEA Shore Controller
- DEA Logistics Officer
- DEA Environmental Liaison Officer
- DEA Media Officer
- SAMSA Operations Manager
- SAMSA Administration Officer.

For limited spills, the functions above may be combined and undertaken by a smaller number of Departmental Officers. During a spill, this team will meet regularly through the JRC for the purpose of planning, reviewing and managing the operation.

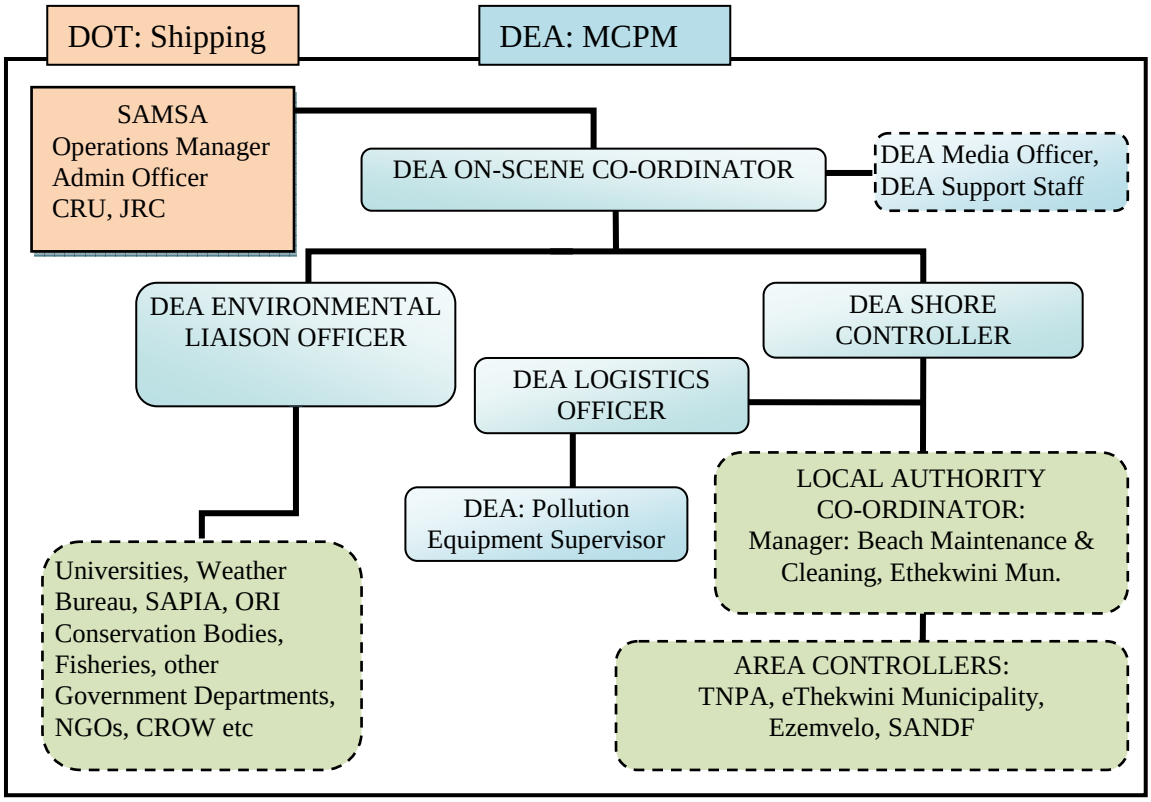


Figure 4: Diagram showing the DEA Response Team and Associated Links

8.1.1 Joint Response Committee (JRC)

The Joint Response Committee is convened on the instruction of the SAMSA Operations Manager, usually for Tier 2 or Tier 3 incidents, after consultation with DEA and other major role players. The JRC is chaired by SAMSA's Operations Manager or, the DEA OSC if no shipping casualty is involved. The role of the JRC is to:

- bring together all major role players to discuss and agree to plans for prevention and combating of oil pollution during the incident;
- co-ordinate all operations and approve expenditure to ensure prompt payment by insurers;
- meet regularly, usually daily, but will decrease as the urgency abates;
- provide a co-ordinated and factual response to the media and arrange press conferences with major stakeholders.

The convening of the JRC and establishing the JOC with communications and facilities will be undertaken by the Casualty Response Unit (CRU) if a shipping incident is involved. Where a CRU is not involved the DEA OSC and/or the SAMSA Operations Manager will establish the JOC.

The protocol for the management of the JRC is provided in the National Plan. A record of decisions taken at the JRC should be provided after each meeting. (See example in Appendix V)

The following representatives will make up the JRC, as relevant:

- SAMSA Operations Manager or delegated Officer (Chair);
- Ships Owner / Insurer;
- Independent Auditor;
- DEA On Scene Co-ordinator (Alternate Chair);
- DEA Environmental Officer;
- SAMSA Admin Officer;
- Local Authority Co-ordinator;
- TNPA;
- Area Controllers;
- Media Officers;
- CROW/SANCCOB representative.

8.1.2 Casualty Response Unit (CRU)

In the event of there being a significant maritime involvement resulting from a shipping incident, such as salvage of stricken vessels, SAMSA will establish a Casualty Response Unit. This could either be set up in conjunction with JOC or at another convenient location such as the SAMSA Shipping Division Offices in Durban. This unit will be equipped with the necessary telephones, radios, maps, charts, state boards etc., and will serve as the operational headquarters for the following persons:

- SAMSA Operations Officer;
- Senior ship surveyors;
- Naval architect;
- SAMSA legal officer;
- SAMSA administration officer;
- TNPA representative (if a Port is involved).

The SAMSA CRU team shall undertake the following actions:

- Determine the name and contact details of the vessel's owner;
- Establish the insurance status of the vessel and the name of the P&I Club, if any;
- Request details of the fuel oils and other harmful substances on board;
- Evaluate the specific threat of the pollution posed by the vessel in respect of her bunkers and/or cargo on board;
- Obtain any additional particulars, calculations or considerations required by the Operations Manager;
- Convene a JRC and establish a JOC with communications and facilities;
- Obtain a cargo manifest for the ship;
- Prepare press releases;
- Inform affected authorities and parties; and
- Where appropriate, representing SAMSA as part of any active intervention aboard the maritime casualty.

8.2 JOB DESCRIPTIONS OF DEA AND RELEVANT SAMSA OFFICIALS

For convenience, the following are called Job Descriptions but are solely to inform Authorities of the pertinent tasks that will be undertaken by the officers assigned these functions for the duration of the incident. For reasons of brevity and clarity the responsibilities and tasks that fall outside the direct activities for preventing and combating pollution of the shoreline by oil are omitted.

8.2.1 DEA On-Scene Co-ordinator

- Determine whether the shoreline is at risk of being impacted by oil.
- Having established that the shoreline is at risk, determine:
  - the probable time and site of the initial impact
  - the anticipated magnitude of the impact
  - the probability of a fire hazard
  - the level of response required: Tier 1, 2 or 3 and the response required by each local authority (ALERT, MOBILISATION or IMPLEMENTATION).
- Inform SAMSA and decide on the requirements of a Joint Response Committee. In light of the above, establish the departmental Response Team and decide on the location for the control centre as set out in Section 8.5.
- Agree on response actions required, with other stakeholders and monitor these activities.
- Decide on deployment of DEA equipment and resources: aerial surveillance, booms, skimmers etc., as required.
- Co-ordinate the subsequent activities of the Response Team, including setting up daily meetings, and representing DEA at the JRC.
- Activate the systems for receipt of air surveillance observations, weather forecasts, satellite imagery and other day-to-day information at the control centre.
- Continually gather facts for re-evaluating the situation, and inform other members of the Response Team and Local Authorities of any changes in the level or approach of response measures.
- Obtain approval for steps where financial implications are involved.
- Ensure that accurate records of events are being kept.
- Arrange for the disposal of collected oil and oily debris after consultation with the relevant authorities.
- Keep Shore Controller informed of all developments at the JRC.

8.2.2 DEA Shore Controller

- Advise the Local Authorities of the levels of response required.
- When necessary, establish a Shore Control Centre.
- Ensure, where possible, that the recommended priority protective measures are implemented timeously. Advise on boom deployment.
- Ensure that the protection and clean-up of the shoreline is commensurate with the minimum of environmental damage.
- Control the shoreline clean-up to achieve maximum cost effectiveness with the resources available.
- Ensure that the Area Controllers (See Section 8.4.2) keep proper and accurate records.
- Keep the DEA OSC and Environmental Liaison Officer informed of all shore-based response operations.

8.2.3 DEA Logistics Officer

- Immediately upon appointment, ascertain the availability of the equipment listed in Section 12 from the Local Authority Co-ordinator for this zone as well as for the adjoining zones and establish requirements for DEA equipment.
- Bring into operation and maintain the communications network at the extent authorised.
- Continually maintain an up-to-date data bank on the availability and deployment of equipment and materials in the zones under threat of impact of oil as well as in the adjoining zones.
- Arrange for procurement of additional materials and equipment as may be required by DEA Shore Controller.
- Within the framework of government policy make all the required arrangements for the transport and accommodation of Departmental Officers.

8.2.4 DEA Environmental Liaison Officer

- Co-ordinate collection of information regarding environmental matters e.g. ecological sensitivity of areas, weather predictions etc and ensure that the JRC remains informed.
- Supply DEA On-Scene Co-ordinator with all relevant information.
- Liaise with environmental experts, NGO’s and I&AP’s.

8.2.5 DEA Pollution Equipment Supervisor

The DEA pollution equipment is held at the DEA Pollution Store in Paarden Island in Cape Town. The store is manned by one supervisor and two artisans. The supervisor is responsible for:

- Maintaining a register of all equipment;
- Ensuring equipment is well maintained and ready for deployment;
- Adhering to maintenance schedules for all equipment;
- Loading and dispatching equipment when required;
- Assisting with deployment of equipment when required;
- Ensuring staff are adequately trained to handle equipment;
- Keeping records of where and when equipment is deployed;
- Ensuring equipment is cleaned or replaced after each incident.

8.2.6 DEA Media Officer

- Liaise with other organisations in terms of media response.
- Provide press releases, press meetings and photographic opportunities, working through JRC where appropriate.
- Participate in daily operational meetings.
- Ensure Website is maintained and updated.
- Co-ordinate VIP visits.
- Maintain archive of media response for permanent record.

8.2.7 SAMSA Operations Manager

- Where appropriate will set up a Casualty Response Unit.
- Convene a JRC and establish a JOC with all communications and facilities.
- Co-ordinate and supervise all technical activities relating to a shipping casualty.
- Supervise any oil transhipments.
- Co-ordinate legal and financial aspects relating to an incident, in collaboration with Legal Adviser and SAMSA Administration Officer.
- Consult with DEA On-Scene Co-ordinator in matters relating to environmental considerations connected to a potential or actual oil spill.

8.2.8 SAMSA Administration Officer

- When required, with the assistance of the DEA On-Scene Co-ordinator and the SAMSA Operations Manager, negotiate and arrange for guarantees/undertakings to be obtained from owner / agents / insurance representatives.
- Undertake the task of minute's secretary for meetings called by JRC.
- Maintain separate, complete and up to date records of all technical and environmental activities pertaining to the spill incident and of expenditure incurred by all parties involved.
- Attend to the purchase of consumables and capital equipment required by both the SAMSA and Department of Environmental Affairs after having obtained the necessary authorisation.
- Receive and authenticate all claims for loss or damage as envisaged either in Section 9(1)(a) or Section 9(1)(c) of Act No.6 of 1981 and process for payment.
- Receive and authenticate all statements of account for protection measures taken and clean-up costs incurred by Local Authorities and parties contracted to SAMSA or Department of Environmental Affairs and process for payment. (Claims relating to coastal protection and clean-up are to be channelled through the Department of Environmental Affairs before processing.)

8.3 LOCAL AUTHORITIES ORGANISATION

In the event of an oil spill, Local Authorities are required to take certain actions and nominate certain persons in order to be able to respond effectively to the spill.

In this Zone, the Manager: Aquatic Safety, eThekwini Municipality has been nominated to undertake the task of Local Authority Co-ordinator (See Section 6.2 and 8.4.1). In addition, when alerted, all Local Authorities concerned must nominate officers from within their organisations to become Area Controllers, Response Officers and Administration Officers for the duration of an incident. The inter-relationships of these officers, whose efforts will be supervised by the DEA Shore Controller, are depicted in the organogram in Figure 5. The Area Controllers (for areas A-E as indicated in Section 10) will co-ordinate the activities of the Site Officers.

In terms of response actions, the Local Authorities will be required to provide assistance in the form of supervision, labour, transport and equipment for the protection and clean-up of their beaches and estuaries as set out in Section 10. They will also be responsible for making arrangements with local Traffic and Police Officers to ensure traffic and crowd control in the vicinity of the impacted area.

8.4 JOB DESCRIPTIONS OF LOCAL AUTHORITY OFFICERS

As in Section 8.2, the Job Descriptions prescribed here include only those tasks to be undertaken by the appointed officers in the event of an oil spill incident.

8.4.1 Local Authority Co-ordinator

- Establish and maintain the communications network between DEA Shore Controller and Area Controllers.
- Provide the DEA Logistics Officer with information on the present deployment of equipment in the Zone and the availability of other equipment within the Zone.
- Represent local authorities at JRC if necessary.
- Co-ordinate the supply of equipment between Local Authorities.
- Ensure adequate traffic and crowd control.
- Issue permits to DEA personnel and scientific advisers to allow free access to shoreline.
- Undertake preparatory activities as listed in Section 6.2.

8.4.2 Area Controller

- Supervise shoreline protection and clean-up measures and ensure effective control of work parties on site.
- Obtain approval for purchase of capital equipment.
- Attend JRC meetings when necessary.
- Procure consumables, labour and machinery hire.
- Ensure that time sheets for charge hands, labour and machinery are kept on an hourly basis.

8.4.3 Site Officer

- Supervise clean-up teams.
- Keep log of manpower and equipment used.
- Collect samples.
- Keep Area Controller informed of progress and areas requiring special attention.

8.4.4 Area Administration Officer

- Maintain time sheets for charge hands, labour and machinery on an hourly basis and the tasks performed against these time sheets.
- At the end of the incident, provide a full report on the operations undertaken and detailed costing of each operation.

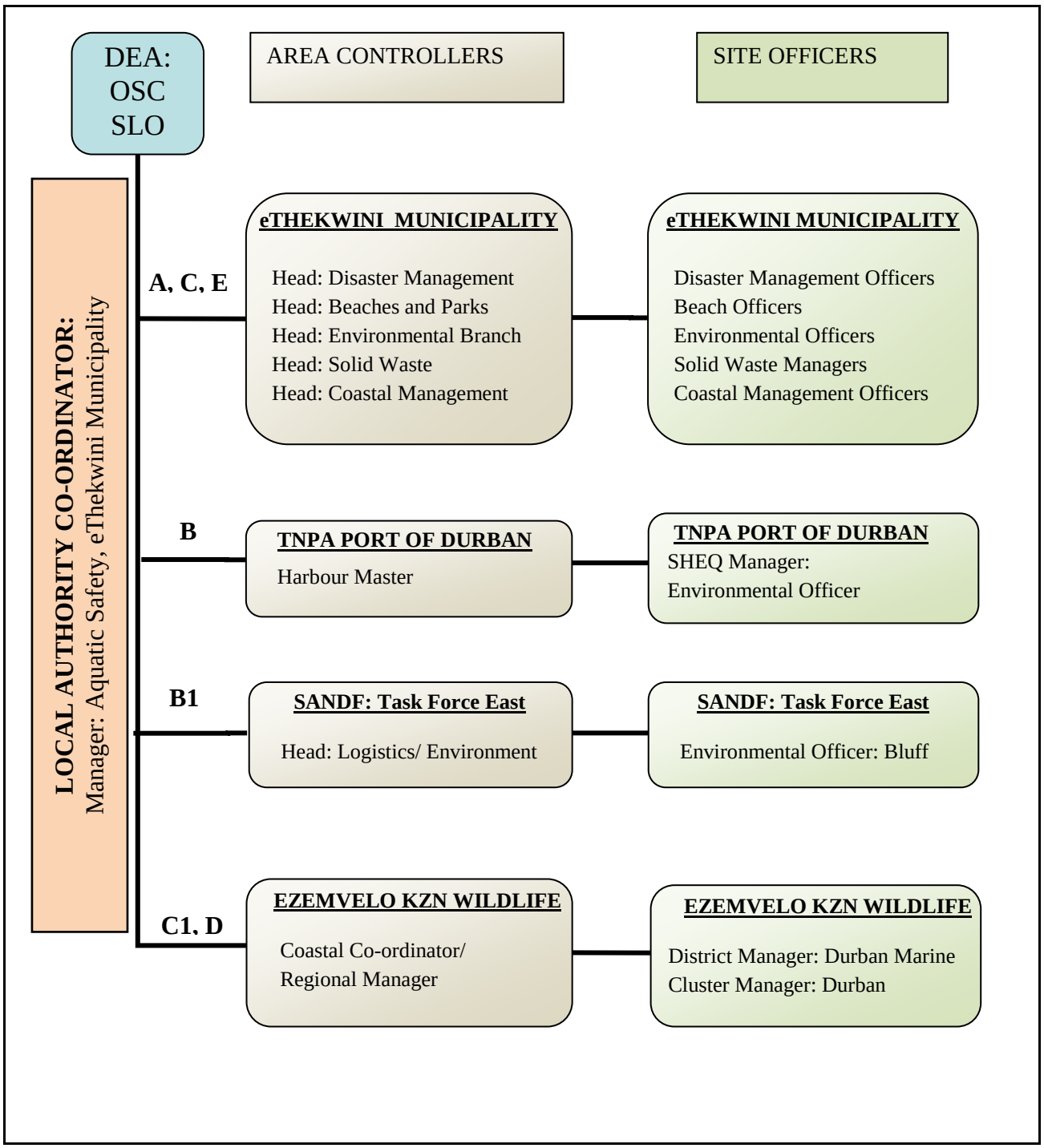


Figure 5. Diagram showing the Local Authority Organisation for Areas A-E (in Section 10)

8.5 FACILITIES

8.5.1 Joint Operations Centre (JOC)

The Joint Response Committee (JRC) which is described in Section 8.1.1 will operate from the Joint Operations Centre (JOC). The JOC will be established at a suitable venue as close as possible to the response operation, to deal with Tier 2 or Tier 3 spills. In the Durban Zone this would most likely be the Emergency Operations Centre of the Disaster Management Branch of the eThekwini Municipality (3 Jelf Taylor Crescent, Durban).

The co-ordination of all shoreline protection and clean-up activities will take place from this Centre. The Centre comprises a sophisticated communications room and operations room from where the co-ordination of manpower and resources will be undertaken during a major oil spill situation.

For smaller incidents, other facilities could be used, such as SAMSA's offices in Durban or local municipality offices.

The JOC will provide the communications and facilities required for the Joint Response Committee. This facility will need to be equipped with telephones, fax machines, photocopier, white boards, computer and email facilities, and all conveniences to run meetings. It would also be useful to have a digital projector and screen for relaying photographic information.

8.5.2 Shore Control Centre (SCC)

In the event of large quantities of oil (Tier 2 or Tier 3 spills) impacting, or threatening to impact the shoreline, a Shore Control Centre will be established at a convenient location. Depending on the circumstances and extent of the operation, this Shore Control Centre may either be established in conjunction with the JOC or as a separate entity. Local disaster management control centres or even offices or hotels could accommodate this centre. The co-ordination of all shoreline protection and clean-up activities will take place from this Centre. The same facilities as described for the JOC are required.
The following persons will operate from this facility:

- DEA Shore Controller
- DEA Logistics Officer
- Local Authority Co-ordinator (alternatively at JRC)
- Local Authority Area Controllers (alternatively at JRC)
- DEA On-Scene Co-ordinator (alternatively at JRC)
- DEA Environmental Liaison Officer (alternatively at JRC)

8.5.3 Local Shore Control Centres

In the event of lesser spill situations, where oil has impacted or is threatening to impact the shoreline in restricted localised areas, protection and clean-up operations may be co-ordinated from the Local Shore Control Centre to be established at the time. Possible locations are local municipal offices. These Centres should have direct contact with the JOC. The number of officers operating from these centres will depend on the size and range of the spill.

8.5.4 Mobile Control Units

The eThekwini Municipality has mobile units, some of which have off-road capabilities, which can be used for on- site co-ordination. These self-contained vehicles are well equipped with communication facilities. They could accommodate the Shore Logistics Officer, Area Controllers, and Area Administration Officers, depending on the circumstances.

8.5.5 Restricted Access

There is a restricted area near Chain Rocks, which belongs to Transnet, but Ezemvelo KZN Wildlife and the Municipality have keys, which could be used in an emergency.
Permits are required for the Bluff Security area, Salisbury Island, and Island View. These permits can be obtained from the SANDF: Regional Joint Task Force East and the TNPA.

8.6 COMMUNICATIONS

8.6.1 Telephone and Cell Phone

This will be the main form of off-site communications between the control centres and other outside agencies or bodies. During high profile incidents, cell phone networks may become jammed due to extensive use by media and response personnel, and other forms of communications may have to be utilised.

8.6.2 E-mail and Website

E-mails are an effective way of distributing information such as press releases, weather reports and photographic accounts from on-site locations. Distribution groups can be set up in the address list at the beginning of the incident to facilitate circulation. Often, personnel are working remote from their normal offices, and hence receipt of emails should not be taken for granted. It is recommended that receipt of emails be confirmed either through follow up phone calls for urgent matters, or by requesting a “read receipt” option.

A website, managed by DEA, with all the relevant information pertaining to the incident is a useful tool for ensuring that the factual information is relayed correctly to the other stakeholders, the press and members of the public. This could be a website dedicated to oil spill response and contingency planning and could include all the oil spill contingency plans. Such a site would be invaluable in keeping local authorities informed of amendments to their plans and for sharing lessons learned.

8.6.3 Radio

Radio facilities may be utilised for communications among the various agencies involved in the oil spill response:

- DEA Officers may communicate between themselves and with the pollution vessels and aircraft by means of their own VHF sets, using the marine frequencies.
- The eThekwini Municipality has a VHF system with a base station, portable and mobile sets which link the Fire Station, Beach Offices and Disaster Management Emergency Operations Centre.
- KZN Sharks Board boats and vehicles are fitted with radios.
- Ezemvelo KZN Wildlife has a base station in the Durban regional office which can communicate with radio-equipped Ezemvelo vehicles along the coast.
- The Port Control (TNPA) operates mainly on VHF marine frequencies and is in contact with ships at sea, the DAFF Pollution Control Vessels and the DEA K9 surveillance aircraft.

8.6.4 Media Response and VIP Visits

A major oil spill is of immediate interest to the local and international media. It is in the public interest, and the interest of all concerned, to keep the media informed as fully and regularly as possible. Failure to consider the media response at an early stage may have serious implications for the management of the whole incident.

A designated DEA media officer (refer to Section 8.2.6) will arrange press conferences and issue regular news bulletins. Information provided should be consistent with other organisations and as accurate as possible. Good co-operation between all press officers is essential, and combined press conferences will be arranged through the JRC. The media must not be allowed to interfere with the operational activity of the emergency operation.

A strategy for interacting with the media should be developed pro-actively, and daily press conferences and news bulletins should be arranged. A media information pack should be prepared prior to any incident. This will facilitate good media relations during an event. An initial pro-forma press holding statement should be prepared by the media officer. A press release/sitrep template is provided in Appendix VI. A dedicated website will provide a reliable source of information, and should be updated regularly.

Whilst staff cannot be prevented from talking to the media, they should be advised to refer all queries to the media officer. If they are hounded by reporters, they should limit their comments to exactly what they are doing and not be tricked into making assumptions or discussing issues on which they are not fully informed. The media officer should be pro-active in facilitating opportunities for the press to interview response personnel.

It is inevitable that, in the case of a major incident, Ministers or other VIP's will wish to visit the site or response centres. The Media Officer should ensure that these visitors are properly escorted and informed, and should advise management and staff of these visits during the daily meetings.

9. RISK ASSESSMENT AND COASTAL SENSITIVITIES

9.1 IDENTIFICATION OF RISKS

The National Contingency Plan describes the risks associated with high volumes of shipping traffic passing around the South African Coast. All maritime traffic, calling at South African Ports or in transit around the coast, presents a risk of marine pollution resulting from collisions, groundings, oil cargo and bunker transfers, structural failure or other operational spills. Various types of oil from light crude to heavy bunker fuels can be released from these types of casualties.

The table below summarises a few of the major incidents which have occurred off the South African Coast.

Table 9.1 Some major incidents impacting the South African Coast

YEAR	INCIDENT	OIL SPILLED	ENVIRONMENTAL IMPACT
1968	*WORLD GLORY* Durban	15 000 tons crude oil	Dispersed at sea
1968	*ESSO ESSEN* Cape Peninsula	15 000 tons crude oil	3000 oiled penguins 500 oiled gannets Coastline impacted
1971	*WAFFRA* Cape Agulhas	15 000 tons crude oil	1200 oiled penguins Coastline badly impacted
1972	Unidentified vessel	unknown	1700 oiled penguins
1983	*CASTILLO DE BELLVER* off Saldanha Bay	190 000 tons crude oil	1800 oiled gannets No coastline impacted
	PETINGO off Richards Bay	1200 tons heavy fuel oil	Coastline and estuary impacted
1994	*APOLLO SEA* Table Bay	2400 tons heavy fuel oil	Major beach clean-up operation 10000 oiled penguins
2000	*TREASURE* Table Bay	1300 tons heavy fuel oil	Major beach clean-up operation 19 000 oiled penguins 19 500 penguins relocated

Casualties involving bulk cargo carriers have resulted in significant spills of heavy fuel oil (Apollo Sea, Treasure and Petingo) off the South African Coast. Although such quantities are low by comparison to potential tanker spills, the heavy fuel oil is more persistent than crude oil and has resulted in major impacts on coastal areas and seabird populations. The length of time the oil has been at sea and the types of weathering it has been subjected to, will change its characteristics, and hence the level of response required.

The Port of Durban is the busiest port in southern Africa. In addition, there is a Single Buoy Mooring (SBM) in the Bay, approximately 2 km off Isipingo Beach, which is used for the discharging of crude oil from tankers for supply to the local refineries. This SBM has been the source of a number of small spills over the past years.

9.2 HEALTH AND SAFETY

The health and safety of the people involved in the response operation is of paramount importance. All personnel should be made aware of the hazards associated with their activities. Often people will be working in unfamiliar surroundings, and, where conditions are particularly hazardous, each participating organisation may need its own safety officer. Protective clothing should be provided. Training and exercises can be used to identify health and safety issues.

The following key risks are associated with oil spill response:

- toxic fumes in confined spaces;
- general stress and fatigue of personnel;
- risks associated with equipment handling;
- falling into the sea (hypothermia or drowning);
- slipping on oily decks or oily rocks;
- risks associated with handling oiled wild life;
- sunstroke;
- back injuries from lifting heavy items.

Stakeholders should identify all the health and safety risks associated with their operations and put suitable mitigatory measures in place.

9.3 VULNERABILITY OF THE KWAZULU-NATAL COASTLINE

The KwaZulu-Natal coast is classified as intermediate in terms of oil pollution risk. Although the tanker routes are fairly far offshore, at times they do fall within the limits of the south-westward flowing Agulhas current, which meanders considerably. It also re-circulates over the Natal shelf as an inshore counter-current, so that oil spilled in the main current can be carried inshore. Smaller vessels also often use the inshore currents.

The occurrence of fog on the KwaZulu-Natal coast is rare, but S.A.N. charts of the area carry the following caution: “Abnormal waves of up to 20 metres in height, preceded by a deep trough, may be encountered in the area between the edge of the continental shelf and 20 miles seawards thereof. These can occur when a strong south-westerly wind is blowing, the sea is rough, and the barometric pressure is low.”

Once oil has been spilled at sea, it drifts under the influence of winds, currents and waves. Since most of the surface and inshore currents around the coast of South Africa are themselves strongly influenced by wind direction and speed, a simplistic prediction of oil movement can be based purely on wind data. Oil tends to move at between 2 and 3% of the wind speed, and at a slight angle to the left of the wind direction.

Generally speaking, the prevailing winds are north-easterly during summer, and south-westerly during winter, but the influence of land and sea breezes can be quite marked. The prevailing winds would tend to move oil roughly parallel to the coastline.

Flotsam at sea is subject to the same influences as oil. Beaches where such material tends to be deposited will therefore also be those where oil is most likely to come ashore.

9.4 COASTAL SENSITIVITY

This Zone is characterised by numerous estuaries and lagoons, most of which are often closed, but may breach after heavy rains inland.

Detailed information on the environmental sensitivity of the coast to oil pollution can be found in the Coastal Sensitivity Atlas of Southern Africa. Some of the distinctive features are listed below.

- Important habitats for birdlife, in particular, migrant waders, terns, gulls and Pink-backed Pelicans.
- Aliwal Shoal Marine Protected Area, is a biodiversity “hotspot”, a site of great fish abundance and a world famous diving location where ragged-tooth sharks congregate.
- Seabirds, which forage offshore, may come ashore in the Durban Zone.
- A number of estuaries and lagoons which are important for bait organisms, fish, water birds and recreational amenities.
- Coastal Forest Reserves.
- The annual “sardine run” along the KZN coast involves large shoals of fish moving in a northerly direction at various distances offshore, occasionally coming so close inshore as to beach themselves. The shoals are accompanied by large numbers of gamefish, dolphin, sharks and a variety of seabirds, particularly gannets.
- Recreational amenities such as popular beaches, tidal pools, surfing, angling and sailing areas.
- Commercial considerations such as shellfish and crustacean fisheries, as well as linefish landings (predominantly reef species such as bream, rockcod and cob).
- Seawater intakes for aquarium and commercial uses.

9.5 PRIORITIES FOR PROTECTION AND CLEAN-UP

In the event of a major oil spill, large stretches of the coastline may be threatened and, ultimately, impacted by oil. The response to such a spill can be divided into two aspects:

a) Protection
b) Clean-up

In both cases, the resources available for the operation are generally limited. Thus, areas meriting priority attention will have been identified ahead of time. A list of the top priorities is given in Section 9.6, while priority ratings for all sites are given in Section 10.

Priorities are established on the grounds of vulnerability, environmental sensitivity and socio-economic importance.

9.6 LISTING OF PRIORITIES

The priorities in the Durban Zone are the estuaries and lagoons, amenity beaches, inshore reefs, recreational fisheries and the Port of Durban. The only effective protective measures in these areas would be the dispersal of oil further offshore. Dispersants, however, can be toxic to marine life, and should a slick reach the vicinity of inshore reefs before it can be dispersed, it might be necessary to allow the oil to come ashore. In this event, the response priorities are provided below. The use of dispersants can only be used with prior approval from DEA.

9.6.1 Protection Priorities

1. **Estuaries and lagoons**: The most important estuaries in this area are: Mkomazi (Umkomaas); Msimbazi; Lovu; Manzimtoti; Mbokodweni; Sipingo; Mgeni; Umdloti; Mhlanga and Tongati.
2. **Mangroves** occur at Isipingo, Mgeni and Umhlanga, and are sensitive to oil pollution as well as to protection measures affecting salinity level**s.**
3. **Port of Durban,** yacht club and offshore moorings.

9.6.2 Clean-up Priorities

Should the protection measures have failed, then:

1. Estuaries and lagoons
2. Amenity beaches and tidal pools
3. Durban Harbour
4. Seabird rescue and rehabilitation. Should the spill occur during the "sardine run", it is likely that large numbers of seabirds, particularly gannets, will be oiled. A bird-cleaning station will be set up at CROW, but it may be necessary to set up a temporary holding facility in the zone.

9.7 STRATEGY FOR PROTECTION AND CLEAN-UP

In managing the response operation, the aims are prioritised as follows:

- First, to prevent pollution occurring
- Second, to minimise the extent of any pollution that occurs
- Third, to mitigate the effects of that pollution

The DEA On-Scene Co-ordinator, in consultation with SAMSA and the JRC, will decide on the actions required to mitigate the extent of pollution. Initially the DEA surveillance aircraft will be requested to investigate the situation. Decisions will be made regarding the following methods of response:

- Assessing and monitoring;
- Dispersant spraying operations according to strict policy guidelines;
- Mechanical recovery operations;
- Cargo transfer operations;
- Protection of coastal resources;
- Shoreline clean-up techniques.

The aim of the operation is to minimise the damage (environmental, ecological, amenity or financial). The decisions will be based on the following considerations:

- The severe limitations on the effectiveness of at sea recovery techniques;
- The distance from shore of the casualty;
- The type of oil spilled;
- Weather conditions and currents;
- The time needed to deploy equipment and resources to the scene;
- Environmental sensitivities in relation to clean-up methods.

Oceanographic conditions off the South African coast are not generally conducive to containment and recovery of oil at sea. International experience has shown that it is unlikely that more than 20% of spilled oil can be recovered at sea. Booms and skimmers should therefore only be used in sheltered ports and coastal areas, unless particularly calm conditions prevail offshore.

Booms and barriers will be used to protect sensitive coastal features such as estuaries, harbours and marinas. Where insufficient booms are available, barriers can be constructed from other materials such as straw.

Manual clean-up measures are generally preferred for sandy beaches, to minimise the amount of sand removed. Mechanical equipment, such as bulldozers may be used in situations where the oil is very thick.

Seabirds are particularly vulnerable to oil pollution. Some species such as penguins and gannets can be successfully rehabilitated. Although there are no penguin colonies in this Zone, penguins often forage over large distances offshore, and in the past, there have been incidences when oiled penguins have come ashore along this part of the coastline. In some years large concentrations of cormorants have also been recorded, especially during the sardine run.

CROW (with assistance from SANCCOB if required) will organise the rehabilitation of oiled seabirds. The South African Association for Marine Biological Research (SAAMBR) which includes the Oceanographic Research Institute (ORI) and Sea World at uShaka has the capacity and the capability to treat approximately 30 oiled seabirds, and can provide a temporary (24 hour) holding facility for up to 200 oiled seabirds. Ideally these birds would then need to be transferred to CROW/SANCCOB for rehabilitation. Sea World will also be able to assist with the raising of orphaned penguin chicks as well as rehabilitation of seals and turtles that are oiled.

ORI is available to provide expert assessment on the status and risk to specific ecosystems, including coral reefs, estuaries, the intertidal zone and specific hotspots. In most cases ORI would work in partnership with Ezemvelo KZN Wildlife.

Further discussion regarding the use of dispersants needs to be initiated by DEA with the other stakeholders. There may be a pertinent case for the early use of dispersants to protect coastal reefs, seabird populations, and to prevent oil from entering estuaries.

9.8 SITE SPECIFIC INSTRUCTIONS FOR PROTECTION AND CLEAN-UP

Specific instructions for protection and clean-up of the coastal features of this Zone are given in geographical sequence predominantly from south to north in Section 10. It should be noted that the use of oil spill dispersants is NOT PERMITTED for treating oil that has impacted the shoreline (see Addendum B). In terms of the “Policy on the use of oil spill dispersants in South African waters”, the use of dispersants at sea can only be undertaken with approval through DEA (see Addendum F). In short, the policy prohibits the use of dispersants in water depths less than 30 metres and within 5 nautical miles of the coast.

Priorities for both protection and clean-up are indicated in Section 10 by means of the words “high”, “medium” and “low” priority ratings.

It will be noticed that in certain areas no clean-up actions are recommended. Exposure to heavy surf action in some areas promotes natural cleansing of both sandy beaches and rocky shores. In addition, there are stretches of the coast which are more or less inaccessible, and clean-up will therefore only be attempted in the event of heavy deposits of oil, from where oil may be refloated and moved to estuaries or identified amenity beaches. There may be certain times when it will be necessary to clean beaches which have been assigned a medium or low rating, even if they are only lightly oiled; for example, if an event is to be staged there, or if the beach is used for walking dogs etc.

In some instances, clean-up operations could be more damaging than the oil, and in these instances it might be best to “do nothing.”

A map of the whole Zone appears in Section 10. Each stretch of coastline on the map is marked with a letter of the alphabet and is apportioned to the responsible local authority for clean-up. In certain cases, abutting Responsible Authorities may be required to undertake clean-up measures for the neighbouring Local Authority, even though these areas do not fall under their jurisdiction. This may be the case where small stretches of coastline are bordered by large stretches or where certain Local Authorities do not have sufficient resources to undertake the required tasks. These areas are marked with a (+) sign in the margin of Section 10.

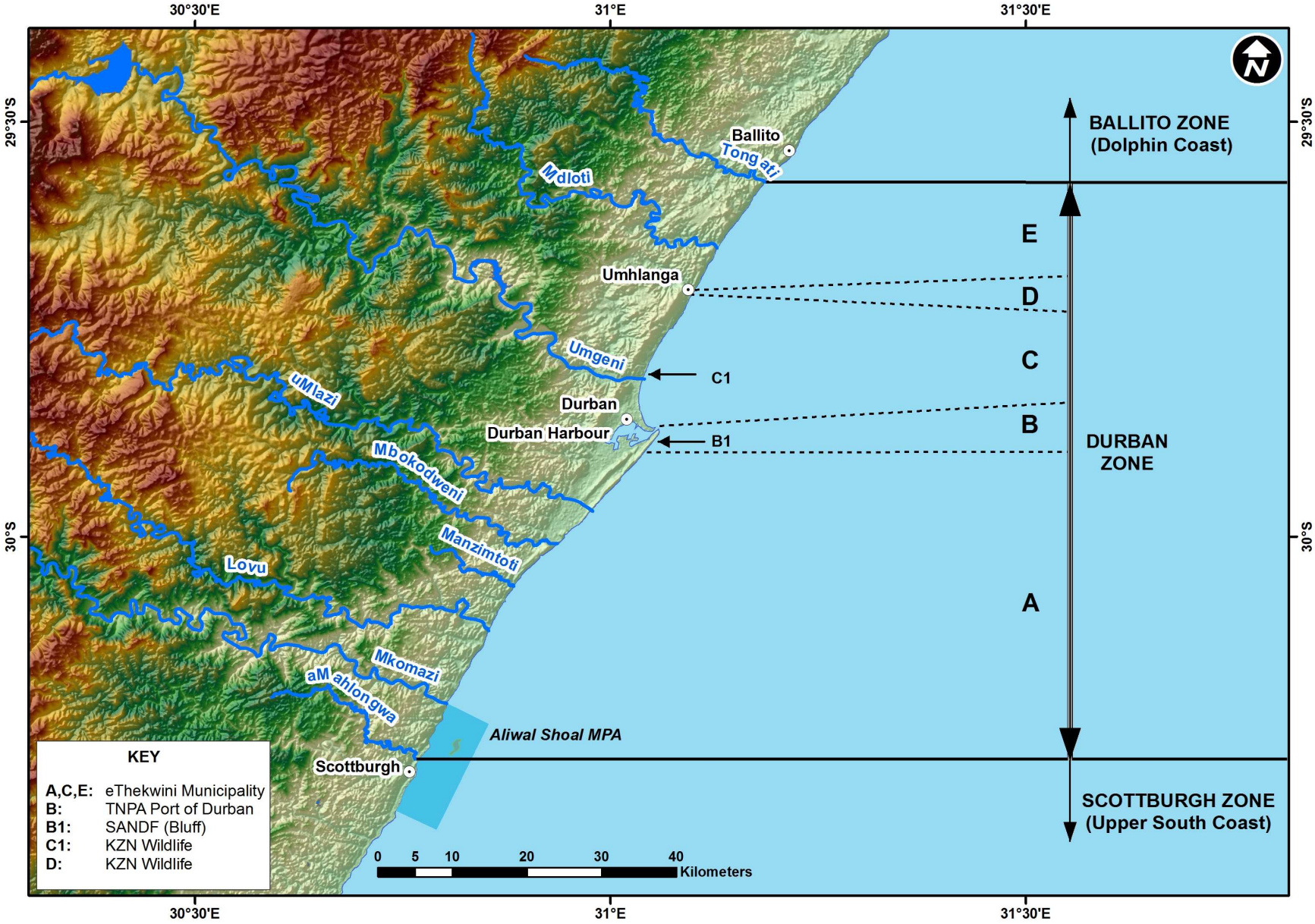
Maps of estuaries and more detailed instructions referred to under protective action can be found at the end of Section 10. It should be noted that these are the current, recommended procedures and that the linear scales indicated on the estuary maps are approximations only. Should the river mouth conditions have changed, or should the suggested materials not be available, a different approach might have to be adopted. For example, recent storms along the KZN Coast resulted in the erosion of sand from many coastal areas, and there may not be enough sand available to raise the barriers to prevent overtopping. A range of possible alternatives can be found in the document titled "Emergency Barriers from Materials of Opportunity" (EBMO), but it might be necessary to fall back on individual ingenuity and initiative. Diagrams illustrating the construction of barriers are provided at the end of section 10.

The closure of open, medium sized temporary open / closed systems by mechanical manipulation of sand across the mouth will prove difficult. Therefore, before any mechanical contingency is enacted relevant expertise should be consulted.

General details of methods for protection and clean-up can be found in Addendum B.

Section 10 sets out the protection measures that are to be put into immediate effect when requested by the DEA Shore Controller as well as the clean-up measures that are to take place if the coastline is impacted by an oil spill.

10. SITE SPECIFIC RESPONSE


30°30'E
31°E
31°30'E
29°30'S
30°S
BALLITO ZONE
(Dolphin Coast)
Ballito
Tongati
Mdloti
E
Umhlanga
D
Umgeni
C
C1
uMlazi
Durban
Durban Harbour
B
B1
DURBAN
ZONE
Mbokodweni
Manzimtoti
Lovu
A
Mkomazi
aMahlongwa
Aliwal Shoal MPA
Scottburgh
SCOTTBURGH ZONE
(Upper South Coast)
KEY
A,C,E: eThekwini Municipality
B: TNPA Port of Durban
B1: SANDF (Bluff)
C1: KZN Wildlife
D: KZN Wildlife
0 5 10 20 30 40
Kilometers

10. SITE SPECIFIC RESPONSES

SITE: Responsible Authority Pertinent Detail	PROTECTION Priority Rating	 Action	CLEAN-UP Priority Rating	 Action
ALL AREAS DEA: Oceans and Coastal Conservation DAFF: Fisheries Control				
Commercial oyster collection.	High	Advise permit holders to discontinue collection of shellfish until advised by DEA that collection can continue.		
Commercial Fisheries	High	Advise commercial fisheries of impending threats.		
KZN Sharks Board – shark nets	High	Notify KZN Sharks Board of impending threat.		
Aliwal Shoal Marine Protected Area from Mzimbayi River to Mkomazi River. Biodiversity "hot spot" and popular diving area. Managed by **Ezemvelo KZN Wildlife**	High	Attempts will be made to disperse oil if it is far out at sea, but once inshore, dispersant will not be used as this will result in increased exposure of oil marine life.	High	Coastal cleanup to be carried out, taking various environmental sensitivities into account. Ezemvelo, DEA and ORI environmental advisors to be consulted.
A. AMAHLONGWA LAGOON TO SOUTH PIER **eThekwini Municipality** **aMahlongwa to Ilfracombe**				
aMahlongwa Lagoon: Responsibility falls within **Scottburgh (Upper South Coast) Zone Plan.** Mouth usually closed.	High	Build up barrier dune to prevent overwash as shown in Map 20 A.	High	Should oil enter the lagoon, the DEA Shore Controller is to be advised immediately. Clean-up should only be attempted under supervision.
Fishing beaches: Black Rock to Blamey's Bay.			Medium	Leave to natural cleaning except in the event of heavy deposits.

SITE: Responsible Authority Pertinent Detail	PROTECTION Priority Rating	 Action	CLEAN-UP Priority Rating	 Action
Amenity beaches at Blamey's Bay and Clansthal			High	Clean amenity beaches all year round.
Mahlongwana Lagoon: mouth usually closed with limited overwash.	High	Build up barrier dune to prevent overwash as shown in Map 20 B.	High	Should oil enter the lagoon, the DEA Shore Controller is to be advised immediately. Clean-up should only be attempted under supervision.
Sandy and rocky beaches at Widenham.			High	Amenity beaches to be cleaned all year round. Rocky areas to be cleaned of medium to heavy deposits of oil.
Mkomazi River: mouth usually open and tidal for about 2 km. Recreational usage with ski boat base.	High	The mouth would be difficult to close, except under low flow conditions. Protection measures to be implemented as shown in Map 20 C.	High	Should oil enter the lagoon, the DEA Shore Controller is to be advised immediately. Clean-up should only be attempted under supervision.
Beach on North bank of Mkomazi River used for diving launch.			High	Clean beach all year round.
Tidal pool near Umkomazi River mouth.			High	Tidal pool to be cleaned using high pressure seawater jets and oil to be collected and removed using skimmers and/or sorbent materials.
Sandy beaches Mkomazi to Ilfracombe: popular fishing area.			Medium	Beaches to be cleaned prior to and during holiday season, otherwise left to natural cleaning except in the event of medium to heavy oiling.

SITE: Responsible Authority Pertinent Detail	PROTECTION Priority Rating	 Action	CLEAN-UP Priority Rating	 Action
Ilfracombe to Msimbazi				
Amenity beaches: Mnini to Umgababa			High	Clean amenity beaches all year round.
Ngane Lagoon: mouth usually open but with limited tidal penetration.	High	If open, mouth to be closed otherwise, overwash to be prevented if necessary as shown in Map 20 D.	High	Should oil enter the lagoon, the DEA Shore Controller is to be advised immediately. Clean-up should only be attempted under supervision.
Umgababa Lagoon: important estuarine habitat, mouth usually closed, but opens intermittently.	High	If open, mouth to be closed otherwise, overwash to be prevented if necessary as shown in Map 20 E.	High	Should oil enter the lagoon, the DEA Shore Controller is to be advised immediately. Clean-up should only be attempted under supervision.
Sandy and rocky coast between Mnini and Umgababa			Medium	Coastline to be left to natural cleaning, except in the event of medium to heavy oiling.
Msimbazi to Doonside				
Msimbazi Lagoon: mouth usually closed, some recreational usage.	High	If open, mouth to be closed otherwise, overwash to be prevented if necessary as shown in Map 20 F.	High	Should oil enter the lagoon, the DEA Shore Controller is to be advised immediately. Clean-up should only be attempted under supervision.
Sandy amenity beaches at Karridene and Illovo.			High	Clean amenity beaches all year round.
Lovu Estuary: mouth usually closed, but opens intermittently.	High	If open, mouth to be closed otherwise, overwash to be prevented if necessary as shown in Map 20 G. Access from north bank.	High	Should oil enter the lagoon, the DEA Shore Controller is to be advised immediately. Clean-up should only be attempted under supervision.
Mangroves on southern bank of Lovu estuary. **+ Ezemvelo KZN Wildlife**		Raise barrier to prevent overwash or protect mangroves using shore sealing or sorbent booms.	High	Clean-up of mangroves to be undertaken with extreme caution. Ezemvelo and DEA Shore Controller to be consulted.

SITE: Responsible Authority Pertinent Detail	PROTECTION Priority Rating	 Action	CLEAN-UP Priority Rating	 Action
Amenity beaches at Winkelspruit, Doonside and Warner Beach.			High	Amenity beaches to be cleaned all year round. Rocky areas to be cleaned of medium to heavy deposits of oil.
Tidal pool at Warner Beach			High	Tidal pool to be cleaned using high pressure seawater jets and oil to be collected and removed using skimmers and/or sorbent materials.
Little Manzimtoti Lagoon: mouth usually closed and no tidal exchange.	High	If open, mouth to be closed otherwise, overwash to be prevented if necessary as shown in Map 20 H.	High	Should oil enter the lagoon, the DEA Shore Controller is to be advised immediately. Clean-up should only be attempted under supervision.
Doonside to Umlazi Canal				
Amenity beaches at Chain Rocks, aManzimtoti, iNyoni Rocks, Pipeline and Athlone Park.			High	Clean amenity beaches all year round. Rocky areas to be cleaned of medium to heavy deposits of oil.
Tidal pool at iNyoni Rocks.			High	Tidal pool to be cleaned using high pressure seawater jets and oil to be collected and removed using skimmers and/or sorbent materials.
aManzimtoti Lagoon: mouth usually closed, but opens intermittently.	High	If open, mouth to be closed otherwise, overwash to be prevented if necessary as shown in Map 20 I.	High	Should oil enter the lagoon, the DEA Shore Controller is to be advised immediately. Clean-up should only be attempted under supervision.
Mbokodweni Lagoon: isolated from river, new mouth often closed, but opens after heavy rains inland.	High	If open, mouth to be closed otherwise, overwash to be prevented if necessary as shown in Map 20 J.	High	Should oil enter the lagoon, the DEA Shore Controller is to be advised immediately. Clean-up should only be attempted under supervision.

SITE: Responsible Authority Pertinent Detail	PROTECTION Priority Rating	 Action	CLEAN-UP Priority Rating	 Action
Amenity beaches at Tiger Rocks, Mbokodweni, McKenzies Pool and River Mouth.			High	Amenity beaches to be cleaned all year round.
Flat rocky platforms between Tiger Rocks and River Mouth.			High	Oily water to be pumped from rock pools and oil separated for disposal. Rocky areas to be cleaned of medium to heavy deposits of oil.
Isipingo Lagoon: mouth usually closed, with runoff via pipeline. River polluted, but mangrove stand has survived.	High	If open, mouth to be closed otherwise, overwash to be prevented if necessary as shown in Map 20 K.	High	Should oil enter the lagoon, the DEA Shore Controller is to be advised immediately. Clean-up should only be attempted under supervision.
Amenity beach north of Isipingo Lagoon.			High	Amenity beach to be cleaned all year round.
Fishing beaches up to Reunion canal.			Medium	Low amenity beaches to be cleaned of medium to heavy deposits of oil.
Umlazi Canal to South Pier				
Umlazi Canal: Concrete stormwater drainage canal. Limited tidal penetration.	Low	It may be possible to prevent oil from entering the canal, using a sorbent barrier. See Map 20 L.	Medium	Canal should be cleaned of medium to heavy deposits of oil, to prevent oil refloating to adjacent areas.
Amenity beaches at Brighton Beach, Ansteys Beach and Garvies Beach.			High	Clean amenity beaches all year round.
Tidal pool at Brighton Beach.			High	Tidal pool to be cleaned using high pressure seawater jets and oil to be collected and removed using skimmers and/or sorbent materials.

SITE: Responsible Authority Pertinent Detail	PROTECTION Priority Rating	 Action	CLEAN-UP Priority Rating	 Action
B. PORT OF DURBAN **Transnet National Ports Authority**				
Main harbour area with tanker terminal, container quay and extensive commercial operations.	High	TNPA to implement their Port of Durban Oil Spill Contingency Plan. See Map 20 M.	High	Contain oil by means of booms and remove using skimmers or sorbent materials. Harbour walls and jetties to be cleaned using high pressure seawater jets and released oil to be recovered. Refer Port Plan.
Yacht Club	High	Yacht basin to be boomed if possible, otherwise boats to be removed from water where possible.	High	Yachts to be removed from water prior to cleaning. Cleaning to be supervised by DEA Shore Controller.
B1: + SANDF Restricted military area from Fillamore Place to South Pier Base, consisting of rocky shoreline and sandy beaches.		Permits to be obtained from SANDF (Regional Joint Task Force: East).	Medium	Rocky areas to be cleaned of medium to heavy deposits of oil. Oil water to be pumped from rock pools and oil separated for disposal. Sandy beaches to be cleaned of oil at all times, to prevent refloating.
Naval Base at Salisbury Island.	High	Naval Base to operate within the framework of the TNPA Oil Spill Contingency Plan.		**SANDF** to work within the framework of the TNPA Oil Spill Contingency Plan.
C. NORTH PIER TO UMHLANGA **eThekwini Municipality**				
North Pier to Glen Ashley				
Numerous high amenity beaches from North Pier to Blue Lagoon.			High	Amenity beaches to be cleaned all year round.
Seawater Intake for uShaka Sea World.	High	Notify uShaka Sea World to close seawater intake.		

SITE: Responsible Authority Pertinent Detail	PROTECTION Priority Rating	 Action	CLEAN-UP Priority Rating	 Action
Mgeni River: mouth usually open. River polluted but highly productive environment, with mangroves in the Beachwood tidal creek on the north bank. Important habitat for birds and popular recreational area. Access from both banks; viaduct only passable at low tide.	High	It will not be possible to close the mouth, except during periods of drought. Booms to be deployed and barrier raised to prevent overtopping as shown in Map 20 N.	High	Should oil enter the lagoon, the DEA Shore Controller is to be advised immediately. Clean-up should only be attempted under supervision.
C1. + Ezemvelo KZN Wildlife manages the Beachwood Nature Reserve with mangroves along the Tidal creek on the north bank of the Mgeni River mouth.	High	**Ezemvelo KZN Wildlife** to protect the Tidal Creek using shore sealing boom or EBMO barrier (Map 20 N).	High	Clean-up of mangroves to be undertaken with extreme caution by **Ezemvelo KZN Wildlife,** and DEA Shore Controller to be consulted.
Sandy amenity beaches from Umgeni to Glen Ashley.			High	Clean amenity beaches all year round.
Amenity beaches at La Lucia and Umhlanga			High	Amenity beaches to be cleaned all year round. Rocky areas to be cleaned of medium to heavy deposits of oil.
D. UMHLANGA LAGOON **Ezemvelo KZN Wildlife**				
Umhlanga Lagoon: mouth usually closed, but overwash may occur. Nature Reserve; large number of waders.	High	If open, mouth to be closed otherwise, overwash to be prevented if necessary as shown in Map 20 (O).	High	Should oil enter the lagoon, the DEA Shore Controller and Ezemvelo is to be advised immediately. Clean-up should only be attempted under supervision.

SITE: Responsible Authority Pertinent Detail	PROTECTION Priority Rating	 Action	CLEAN-UP Priority Rating	 Action
E. UMHLANGA LAGOON TO TONGAAT RIVER **eThekwini Municipality**				
Rocky and sandy beaches from Umhlanga Lagoon to Newsel.			Medium	Beaches to be cleaned of medium to heavy deposits of oil.
Amenity beaches at Newsel and Umdloti.			High	Amenity beaches to be cleaned all year round.
Natural Tidal Pool.			High	Tidal pool to be cleaned using high pressure seawater jets and oil to be collected and removed using skimmers and/or sorbent materials.
Mdloti (Umdloti) Lagoon: mouth usually closed, but overwash may occur during high spring tides. Mangroves, rich birdlife and recreational area.	High	If open, mouth to be closed otherwise, overwash to be prevented if necessary as shown in Map 20 P.	High	Should oil enter the lagoon, the DEA Shore Controller is to be advised immediately. Clean-up should only be attempted under supervision.
Amenity beaches at La Mercy and Tongaat.			High	Amenity beaches to be cleaned all year round.
Tongati River: mouth usually open; degraded due to sugar mill effluent, sewage and agricultural runoff.	Medium	If open, mouth to be closed (may only be possible during dry periods) otherwise, overwash to be prevented if necessary as shown in Map 20 Q.	High	Should oil enter the lagoon, the DEA Shore Controller is to be advised immediately. Clean-up should only be attempted under supervision.

MAPS INDICATING PROTECTION OF ESTUARIES

NOTE

Before any earth-moving plant (front-end loaders, bulldozers etc) is allowed to operate at an estuary or lagoon mouth where a sand barrier is to be built, the foreman in charge of the plant is to mark the "no go" areas with appropriate stakes. The "no go" areas include those where earth moving plant can and will do extensive environmental damage and areas where the plant can become bogged down, thus losing valuable time in endeavouring to recover it.

The "no go" areas will be pointed out by the DEA Shore Controller and include:

- vegetated sand dunes
- marine wetlands and sand flats rich in bait organisms
- sandy areas of inadequate load bearing capacity to support the earth moving plant.

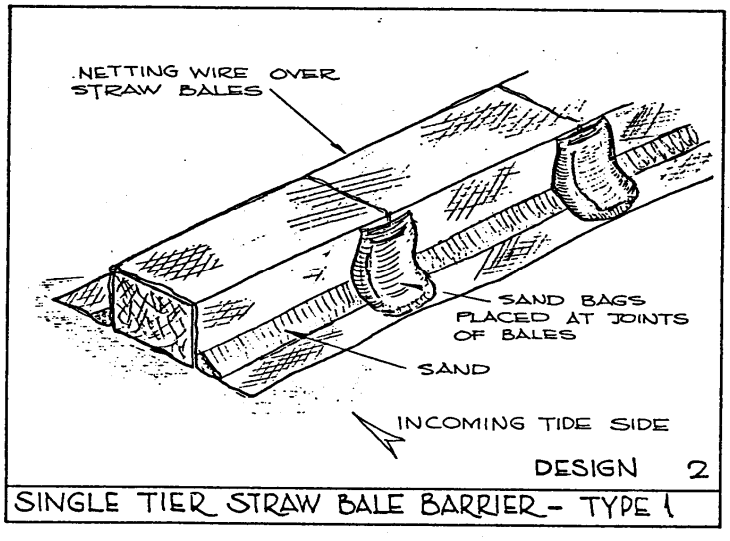
Where circumstances require marine wetlands and/or sand flats to be traversed by earth-moving plant, the access tracks must be demarcated by stones or stakes and the operators should not be permitted to depart from the assigned tracks.

It should be noted that the following recommendations are based on current information, and that the linear scales indicated on the estuary maps are approximations only. Should the river mouth conditions have changed, or should the suggested materials not be available, a different approach might have to be adopted. If there is not be enough sand available to raise the barriers to prevent overtopping, or there is inadequate availability of flotation booms, alternative options such as those provided in the document titled "Emergency Barriers from Materials of Opportunity" (EBMO) may need to be implemented. Diagrams illustrating the construction of such barriers are provided below.

CONSTRUCTION OF SINGLE TIER STRAW BALE BARRIER
(From EBMO by Mulligan *et al*)

MATERIALS REQUIRED

- Rectangular baled straw (length 0,90 - 1,05).
- Sand bags (50kg size, two per bale).
- Netting wire, minimum width 1,8m.
- Shovels and tinsnips or cutting pliers.



CONSTRUCTION

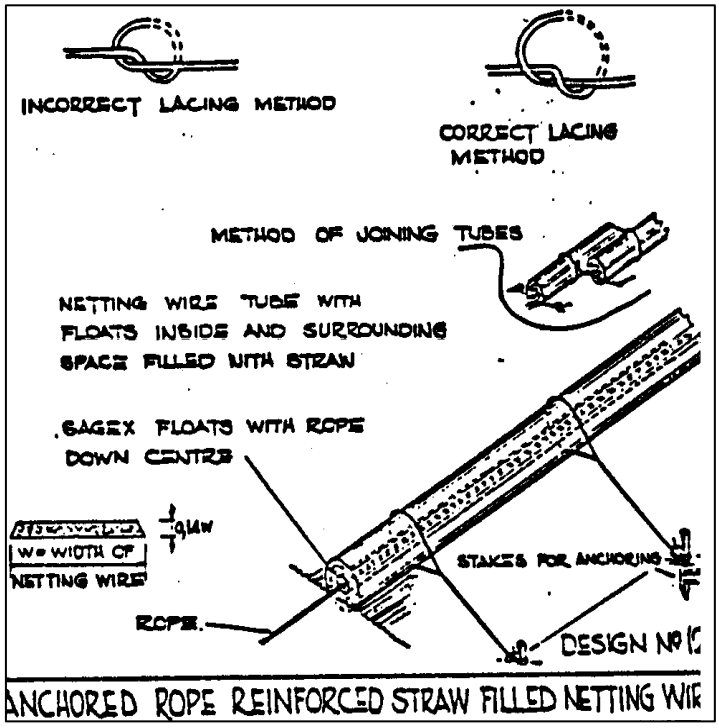
Start in the middle of the proposed barrier, laying bales tightly end to end, working outwards. From one end, unroll 1,8m wide, 50mm mesh wire netting along the length of the barrier.

If more than one roll of wire netting is required, provide a 1 m overlap. Place wire netting around bales as in sketch. Place bags filled with sand on the wire netting on either side of the barrier where the straw bales abut and as close to the bales as possible. The bags can be of plastic or hessian, and can be completely filled. The sand for filling them must not be obtained from vegetated sand dunes.

RESPONSE TIME

A barrier 100 m by 0,35m high will take approximately 12 man-hours to lay and secure, excluding transportation times.

ASSEMBLY OF STRAW FILLED NETTING WIRE TUBE BARRIER

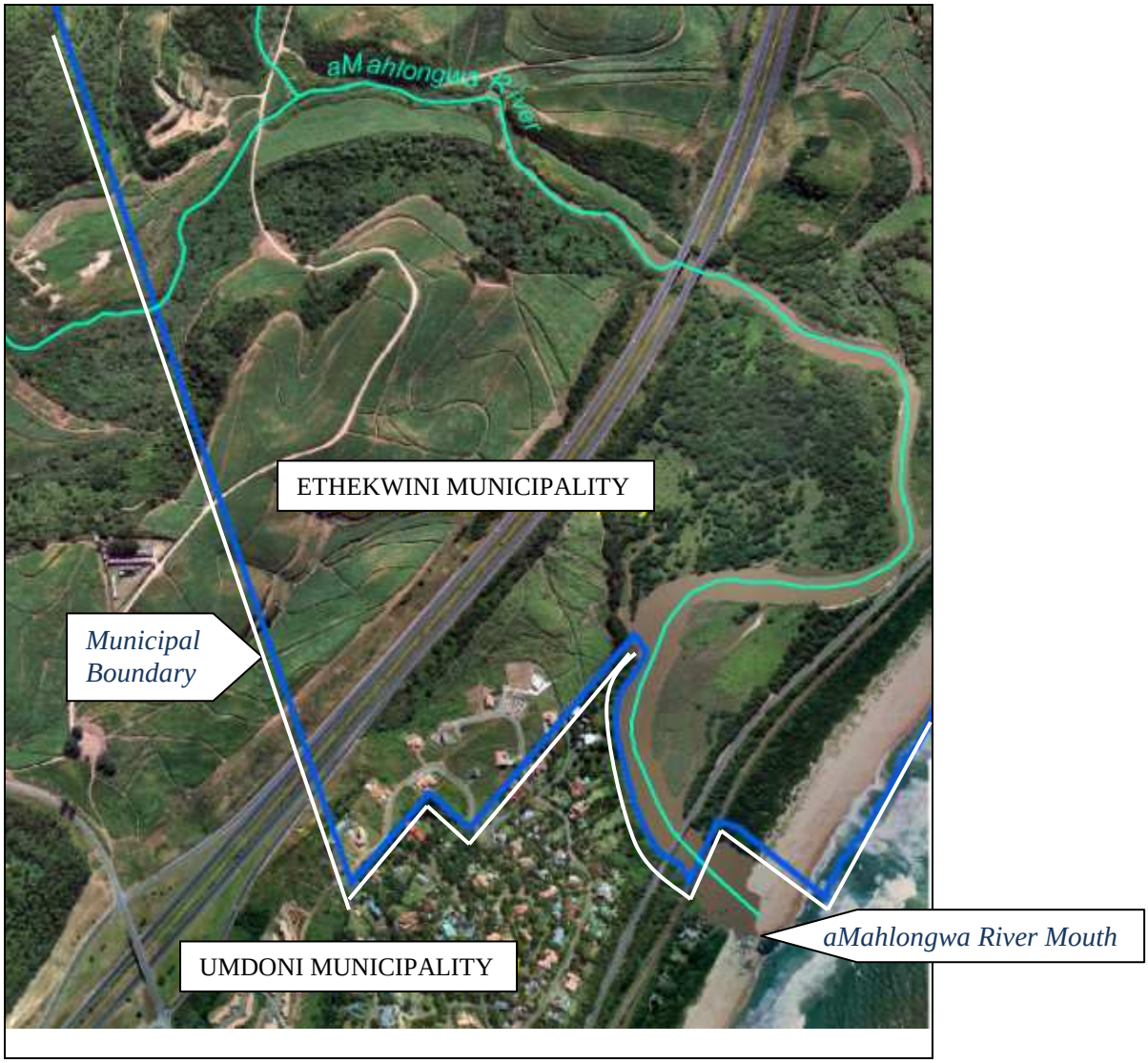


Roll out 50m of 1.8m wide 50mm mesh netting wire. Place bales of straw at 1.3m spacing on netting wire. Roll out 60m of 20mm diameter rope and thread purse seine net floats on rope for 40m. Starting at centre of barrier and working outwards, cut first bale of straw open and spread it to cover the full width of netting wire and 1.3m along its length. Similarly cut open a further two bales of straw on either side, and spread straw. Place rope with floatation attached on top of pile of straw. At centre bring edges of netting wire together, ensuring that the floatation is in the centre of the tube and lace with 2mm cordage using the correct lacing method. A netting needle (tatting shuttle) made from a piece of box wood will make lacing easier. Continue as before and when ends are reached, lace them closed. If correctly packed, barrier will be about 40m long. The sequence of operations is suggested to limit the amount of straw that may be blown away by the wind, if present.

ERECTION OF BARRIER

Select end anchor points for the barrier and drive in a stake until really firm, on or above the high water overwash line, and make each end of the anchor rope of the barrier fast to these stakes, allowing a small amount of slack (to limit excessive tension). If barrier does not span the distance between the high water overwash lines on each bank, a mound of sand can be shovelled into position to prevent water washing around the ends of the barrier. The barrier is to be continually inspected and any repairs needed to be effected immediately.

MAP 20 A AMAHLONGWA RIVER



The aMahlongwa River forms the boundary between the eThekwini Municipality and the Umdoni Municipality, and therefore is the southern boundary of the Durban Zone Plan. As can be seen from the map above, the mouth of the River falls within the Umdoni Municipality, and hence is dealt with in the Scottburgh (Upper South Coast) Zone Plan. However, due to mutual interest, the recommended response is duplicated here.

The mouth of this river is usually closed, but it may open after heavy rains inland and overwash may occur during high spring tides. If the mouth is open, or overwash is likely to occur, sand should be moved across the mouth using a bulldozer or front-end loader. Sandbags could be used to prevent overtopping. During periods of high flow, it may be necessary to install an overflow pipe just above the high water level. Care should be taken not to disturb any vegetated dunes in the area. If there is not enough sand available, straw bales should be used. While the barrier is in position, it is to be inspected regularly, with any repairs being effected immediately.

MAP 20 B MAHLONGWANA LAGOON

MOUTH CONDITIONS

The mouth of this river is usually closed, but it may open after heavy rains inland and overwash may occur during high spring tides.

PROTECTION MEASURES

If the mouth is open, or overwash is likely to occur, sand should be moved across the mouth using a bulldozer or front-end loader. Sandbags could be used to prevent overtopping. During periods of high flow, it may be necessary to install an overflow pipe just above the high water level. Care should be taken not to disturb any vegetated dunes in the area. If there is not enough sand available, straw bales should be used. While the barrier is in position, it is to be inspected regularly, with any repairs being effected immediately.

If the mouth cannot be closed, individual salt marshes and tidal flats should be protected using straw bales or shore sealing, flotation booms.

RESPONSE TIME

The barrier should be completed in 4 1/2 hours, to prevent the construction work being swamped by the rising tide. One bulldozer or front-end loader will be sufficient to complete the task within this period, and it should remain on site to effect repairs until the barrier is stabilised.

MAP 20 C **MKOMAZI RIVER**

MOUTH CONDITIONS

The mouth of this river is usually open, and tidal for about 2 km. The conditions at the mouth are variable. There is good access.

PROTECTION MEASURES

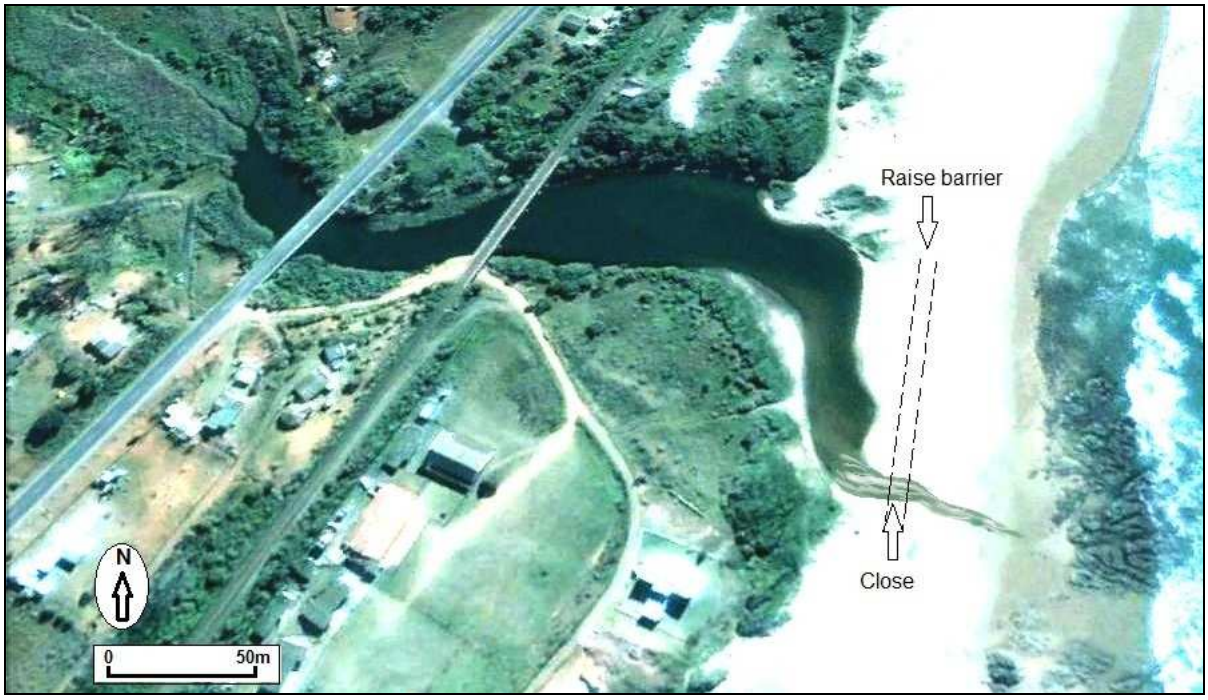
Under some conditions, it may be possible to close the mouth by moving sand across the mouth at XY using a bulldozer or front-end loader. During periods of high flow, it may be necessary to install an overflow pipe just above the high water level. Sandbags could be used to prevent overtopping. Care should be taken not to disturb any vegetated dunes in the area. If there is not enough sand available, straw bales should be used. While the barrier is in position, it is to be inspected regularly, with any repairs being effected immediately.

If the mouth cannot be closed, individual salt marshes and tidal flats should be protected using straw bales or shore sealing, flotation booms. Depending on prevailing conditions, an attempt should be made to deploy a floating barrier as close to the mouth as possible in areas of lowest tidal velocities. The proposed boom site is marked AB on the map.

RESPONSE TIME

The barrier should be completed in 4 1/2 hours, to prevent the construction work being swamped by the rising tide. One bulldozer or front-end loader will be sufficient to complete the task within this period, and it should remain on site to effect repairs until the barrier is stabilised.

MAP 20 D NGANE LAGOON (Mnini)



MOUTH CONDITIONS

Although the mouth is usually open, it should be possible to bulldoze it closed except when it is in flood. There is limited tidal penetration

PROTECTION MEASURES

Under some conditions, it may be possible to close the mouth by moving sand across the mouth using a bulldozer or front-end loader. During periods of high flow, it may be necessary to install an overflow pipe just above the high water level. Sandbags could be used to prevent overtopping. Care should be taken not to disturb any vegetated dunes in the area. If there is not enough sand available, straw bales should be used. While the barrier is in position, it is to be inspected regularly, with any repairs being effected immediately.

RESPONSE TIME

The barrier should be completed in 4 1/2 hours, to prevent the construction work being swamped by the rising tide. One bulldozer or front-end loader will be sufficient to complete the task within this period, and it should remain on site to effect repairs until the barrier is stabilised.

MAP 20 E UMGABABA LAGOON

MOUTH CONDITIONS

The mouth of this river is usually closed, but it may open after heavy rains inland and overwash may occur during high spring tides. There is good access.

PROTECTION MEASURES

If the mouth is open, or overwash is likely to occur, sand should be moved across the mouth using a bulldozer or front-end loader. Sandbags could be used to prevent overtopping. During periods of high flow, it may be necessary to install an overflow pipe just above the high water level. Care should be taken not to disturb any vegetated dunes in the area. If there is not enough sand available, straw bales should be used. While the barrier is in position, it is to be inspected regularly, with any repairs being effected immediately.

RESPONSE TIME

The barrier should be completed in 4 1/2 hours, to prevent the construction work being swamped by the rising tide. One bulldozer or front-end loader will be sufficient to complete the task within this period, and it should remain on site to effect repairs until the barrier is stabilised.

MAP 20 F **MSIMBAZI LAGOON**

MOUTH CONDITIONS

The mouth of this river is usually closed, but it may open after heavy rains inland and overwash may occur during high spring tides.

PROTECTION MEASURES

If the mouth is open, or overwash is likely to occur, sand should be moved across the mouth at XY using a bulldozer or front-end loader. Sandbags could be used to prevent overtopping. During periods of high flow, it may be necessary to install an overflow pipe just above the high water level. Care should be taken not to disturb any vegetated dunes in the area. If there is not enough sand available, straw bales should be used. While the barrier is in position, it is to be inspected regularly, with any repairs being effected immediately.

RESPONSE TIME

The barrier should be completed in 4 1/2 hours, to prevent the construction work being swamped by the rising tide. One bulldozer or front-end loader will be sufficient to complete the task within this period, and it should remain on site to effect repairs until the barrier is stabilised.

MAP 20 G **LOVU ESTUARY**

MOUTH CONDITIONS

The mouth of this river is usually closed, but it may open after heavy rains inland and overwash may occur during high spring tides. There is good access.

PROTECTION MEASURES

If the mouth is open, or overwash is likely to occur, sand should be moved across the mouth at XY using a bulldozer or front-end loader. Sandbags could be used to prevent overtopping. During periods of high flow, it may be necessary to install an overflow pipe just above the high water level. Care should be taken not to disturb any vegetated dunes in the area. If there is not enough sand available, straw bales should be used. While the barrier is in position, it is to be inspected regularly, with any repairs being effected immediately.

RESPONSE TIME

The barrier should be completed in 4 1/2 hours, to prevent the construction work being swamped by the rising tide. One bulldozer or front-end loader will be sufficient to complete the task within this period, and it should remain on site to effect repairs until the barrier is stabilised.

MAP 20 H LITTLE MANZIMTOTI LAGOON

MOUTH CONDITIONS

The mouth of this river is often open, but there is limited tidal penetration. Overwash may occur during high spring tides.

PROTECTION MEASURES

If the mouth is open, or overwash is likely to occur, sand should be moved across the mouth at XY using a bulldozer or front-end loader. Sandbags could be used to prevent overtopping. During periods of high flow, it may be necessary to install an overflow pipe just above the high water level. Care should be taken not to disturb any vegetated dunes in the area. If there is not enough sand available, straw bales should be used. While the barrier is in position, it is to be inspected regularly, with any repairs being effected immediately.

RESPONSE TIME

The barrier should be completed in 4 1/2 hours, to prevent the construction work being swamped by the rising tide. One bulldozer or front-end loader will be sufficient to complete the task within this period, and it should remain on site to effect repairs until the barrier is stabilised.

MAP 20 I MANZIMTOTI LAGOON

MOUTH CONDITIONS

The mouth of this river is usually closed, but it may open after heavy rains inland and overwash may occur during high spring tides.

PROTECTION MEASURES

If the mouth is open, sand should be moved across the mouth at area A using a bulldozer or front-end loader. The barrier at XY should be raised to prevent overtopping. During periods of high flow, it may be necessary to install an overflow pipe just above the high water level. Care should be taken not to disturb any vegetated dunes in the area. If there is not enough sand available, straw bales should be used. While the barrier is in position, it is to be inspected regularly, with any repairs being effected immediately.

RESPONSE TIME

The barrier should be completed in 4 1/2 hours, to prevent the construction work being swamped by the rising tide. One bulldozer or front-end loader will be sufficient to complete the task within this period, and it should remain on site to effect repairs until the barrier is stabilised.

MAP 20 J **MBOKODWENI LAGOON**

MOUTH CONDITIONS

The new mouth of this river is usually closed, but it may open after heavy rains. At other times, both the isolated lagoon to the south, and the new lagoon, should be protected from overwash by building up the barrier dune.

PROTECTION MEASURES

If the mouth is open, or overwash is likely to occur, sand should be moved across the mouth and the barrier at XYZ raised using a bulldozer or front-end loader. Sandbags could be used to prevent overtopping. During periods of high flow, it may be necessary to install an overflow pipe just above the high water level. Care should be taken not to disturb any vegetated dunes in the area. If there is not enough sand available, straw bales should be used. While the barrier is in position, it is to be inspected regularly, with any repairs being effected immediately.

RESPONSE TIME

The barrier should be completed in 4 1/2 hours, to prevent the construction work being swamped by the rising tide. One bulldozer or front-end loader will be sufficient to complete the task within this period, and it should remain on site to effect repairs until the barrier is stabilised.

MAP 20 K **ISIPINGO LAGOON**

MOUTH CONDITIONS

The mouth of this river is usually closed, but it may open after heavy rains inland and overwash may occur during high spring tides. There is good access.

PROTECTION MEASURES

If the mouth is open, or overwash is likely to occur, sand should be moved across the mouth at XY using a bulldozer or front-end loader. Sandbags could be used to prevent overtopping. During periods of high flow, it may be necessary to install an overflow pipe just above the high water level. Care should be taken not to disturb any vegetated dunes in the area. If there is not enough sand available, straw bales should be used. While the barrier is in position, it is to be inspected regularly, with any repairs being effected immediately.

RESPONSE TIME

The barrier should be completed in 4 1/2 hours, to prevent the construction work being swamped by the rising tide. One bulldozer or front-end loader will be sufficient to complete the task within this period, and it should remain on site to effect repairs until the barrier is stabilised.

MAP 20 L UMLAZI CANAL

MOUTH CONDITIONS

The Umlazi Canal is a concrete stormwater drainage canal. There is limited tidal penetration.

PROTECTION MEASURES

If necessary, it may be possible to prevent oil from entering the canal, using a flotation boom or sorbent barrier at a suitable location (AB on the map).

MAP 20 M **DURBAN HARBOUR**

RESPONSE

A Tier 1 oil spill occurring within the Port of Durban and approaches will be dealt with in accordance with the TNPA Oil Spill Contingency Plan for Port of Durban. The Port Plan lists the actions that are to be taken and the Port has equipment in the form of booms, skimmers etc to initiate clean-up. If the response is beyond the capability of the Port, a Tier 2 or Tier 3 response will be initiated through SAMSA and DEA. TNPA requires that all persons within a port must take all reasonable steps to prevent, minimise, mitigate and combat any oil pollution or damage to the environment.

YACHT CLUB

At present it is not possible to boom off the entire area in which yachts are moored. The only safeguard therefore, is to remove boats from the water as far as possible. Alternatively, portions of the mooring could be protected using booms. Clean up of contaminated yachts should be co-ordinated and supervised by the DEA Shore Controller.

SANDF

The SANDF leases land on the Bluff area from the TNPA, and there is a Naval Base on Salisbury Island within the Port. SANDF will take responsibility for the area within their jurisdiction, and will work within the framework of the TNPA Oil Spill Contingency Plan.

MAP 20 N **MGENI RIVER**

MOUTH CONDITIONS

The mouth of this river is usually open and it will not be possible to close the mouth except, perhaps, during time of drought.

PROTECTION MEASURES

A barrier of sand/sandbags should be built to prevent overwash as indicated on the map. Securely staked straw bales should be used if there is not enough sand available. Care should be taken not to disturb any vegetated dunes in the area. Depending on prevailing conditions, an attempt should be made to deploy a floating barrier as close to the mouth as possible, in areas of lowest tidal velocities so that the oil may be deflected onto adjacent banks from where it can be collected. If this is not feasible, individual salt marshes and tidal flats should be protected using straw bales or booms. The proposed boom site (EBMO 1986) is marked XY on the map, but the availability of booms in the area is limited at present and would need to be brought in from other areas.

BEACH WOOD NATURE RESERVE (Ezemvelo KZN Wildlife)

The mangrove community in the creek to the north of the estuary should be given special protection by closing off the creek at AB using straw bales or other absorbent materials as illustrated in the EBMO document.

RESPONSE TIME

The barrier should be completed in 4 1/2 hours, to prevent the construction work being swamped by the rising tide. One bulldozer or front-end loader will be sufficient to complete the task within this period, and it should remain on site to effect repairs until the barrier is stabilised.

MAP 20 (O) UMHLANGA LAGOON

MOUTH CONDITIONS

The mouth of this river is usually closed, but it may open after heavy rains inland and overwash may occur during high spring tides.

PROTECTION MEASURES

If the mouth is open, or overwash is likely to occur, sand should be moved across the mouth at XY using a bulldozer or front-end loader. Sandbags could be used to prevent overtopping. During periods of high flow, it may be necessary to install an overflow pipe just above the high water level. Care should be taken not to disturb any vegetated dunes in the area. If there is not enough sand available, straw bales should be used. While the barrier is in position, it is to be inspected regularly, with any repairs being effected immediately.

RESPONSE TIME

The barrier should be completed in 4 1/2 hours, to prevent the construction work being swamped by the rising tide. One bulldozer or front-end loader will be sufficient to complete the task within this period, and it should remain on site to effect repairs until the barrier is stabilised.

MAP 20 P **MDLOTI (UMDLOTI)**

MOUTH CONDITIONS

The mouth of this river is usually closed, but it may open after heavy rains inland and overwash may occur during high spring tides. There is good access.

PROTECTION MEASURES

If the mouth is open, or overwash is likely to occur, sand should be moved across the mouth at XY using a bulldozer or front-end loader. Sandbags could be used to prevent overtopping. During periods of high flow, it may be necessary to install an overflow pipe just above the high water level. Care should be taken not to disturb any vegetated dunes in the area. If there is not enough sand available, straw bales should be used. While the barrier is in position, it is to be inspected regularly, with any repairs being effected immediately.

RESPONSE TIME

The barrier should be completed in 4 1/2 hours, to prevent the construction work being swamped by the rising tide. One bulldozer or front-end loader will be sufficient to complete the task within this period, and it should remain on site to effect repairs until the barrier is stabilised.

MAP 20 Q **TONGATI RIVER**

MOUTH CONDITIONS

Although the mouth is usually open, it should be possible to bulldoze it closed except when it is in flood. This would probably be more easily achieved from the north bank. Under flood conditions, it should not be necessary to close the mouth as oil would be kept away from the mouth by the strong river flow.

PROTECTION MEASURES

Under some conditions, it may be possible to close the mouth by moving sand across the mouth using a bulldozer or front-end loader. During periods of high flow, it may be necessary to install an overflow pipe just above the high water level. Sandbags could be used to prevent overtopping. Care should be taken not to disturb any vegetated dunes in the area. If there is not enough sand available, straw bales should be used. While the barrier is in position, it is to be inspected regularly, with any repairs being effected immediately.

If the mouth cannot be closed, individual salt marshes and tidal flats should be protected using straw bales or shore sealing, flotation booms. Depending on prevailing conditions, an attempt should be made to deploy a floating barrier as close to the mouth as possible in areas of lowest tidal velocities.

RESPONSE TIME

The barrier should be completed in 4 1/2 hours, to prevent the construction work being swamped by the rising tide. One bulldozer or front-end loader will be sufficient to complete the task within this period, and it should remain on site to effect repairs until the barrier is stabilised.

11. WASTE MANAGEMENT

During the clean-up process, large amounts of oily waste will be generated. Methods for the collection, transportation and temporary storage of this oil can be found in Addendum C. Decisions regarding the final disposal of this oil will be made by the Department of Environmental Affairs: Pollution and Waste Management, and the DEA Shore Controller.

Waste management will need to take into account various streams of oily water and solid waste. Waste contractors will be required to deal with waste requiring special disposal. Arrangements need to be made ahead of time with contractors, to establish their suitability and capabilities for removing oily waste in an environmentally acceptable manner. Response teams need to be fully briefed on how to deal with different types of oily waste. Specially marked, separate containers/skips for oily waste separation and removal need to be provided.

The eThekwini Municipality has three general landfill sites (GLB+) at Mariannhill, Springfield, and Verulem. These sites will not be able to accommodate oily waste.

There are two private hazardous sites at Silverglenn (Wasteman) and Shongweni (Enviroserve), which will accept oily waste. Contact details are provided in Section 13.5.

The KZN DAEA&RD needs to be consulted regarding compliance in terms of permit conditions for waste disposal.

Various contractors involved in the recycling of liquid waste oil, have facilities to collect waste oil from the Durban area, for transportation to processing plants. Fuel Firing Services is involved in the recycling of liquid waste oil and has facilities in the Port of Durban where oil storage tanks are available for storing collected oil. It should be noted that there are limitations associated with contamination of the oil by sand and seawater. The ROSE Foundation can assist with the co-ordination of recycling of waste oil. Contact details are provided in Section 13.5.

12. EQUIPMENT - MATERIAL – MANPOWER

12.1 DEPARTMENTAL EQUIPMENT

The Department of Environmental Affairs manages the national equipment stocks for the combating of oil pollution. This equipment consists of:

- K9 surveillance aircraft on contract
- inshore patrol vessels fitted with dispersant spraying equipment and breaker nets (managed by DAFF)
- an offshore patrol vessel equipped with dispersant tanks (managed by DAFF)
- Seaguardian and Shoreguardian booms, Portbooms and Riverbooms
- Skimmers
- Floating tank and fast tanks
- Inflatable boat
- Drum vacuum unit
- High pressure water washer

This equipment is held at Paarden Island in Cape Town but can be mobilized at short notice.
A full list of equipment is provided in Appendix IV.

12.2 TRANSNET NATIONAL PORTS AUTHORITY EQUIPMENT

The TNPA has oil pollution equipment stocks at all the major ports. This includes booms, skimmers, storage tanks etc. This equipment can be commissioned during emergency situations. The Port of Durban should be contacted to establish availability of equipment. A full list of this equipment is provided in the National Plan.

12.3 SOUTH AFRICAN PETROLEUM INDUSTRY

The Oil Industry has various booms, skimmers and other equipment stored at various locations around the country. Anton Moldan should be contacted to establish the availability of this equipment (Tel: 082 801 6215). A full list of the equipment held by SAPIA is provided in the National Plan.

12.4 COMMERCIAL CONTRACTORS

Various contractors such as Smit Amandla Marine, OPCSA, Drizit, ABZorbit, have equipment available at various locations. This equipment can be hired on contract, and skilled staff are available for deployment. The contact numbers for these organisations are provided at the end of Section 13.

12.5 LOCAL AUTHORITY EQUIPMENT AND MANPOWER

The equipment and materials required for beach clean-up operations by local authorities are for the most part not specifically for oil spills.

The following plant and machinery is likely to be required:

- Bulldozers
- Front-end loaders
- Low bed transporters
- Excavator and tractor loader backhoes
- Self loading trucks / self elevating scrapers
- Articulated dump trucks
- Tractors 2x4
- Tractors 4x4
- Platform truck and crane
- Tip trucks
- Water trucks
- Open trucks
- LDV's 4x4
- LDV's 2x4
- Vacuum tankers

Materials and equipment as listed below may also be needed:

- Portable Centrifugal pumps
- Sludge pumps
- Straw bales
- Petrol generator and lighting sets
- 200 litre drums and bins
- Wire mesh - diamond
- Plastic and hessian bags
- PVC sheeting
- Spades

In terms of manpower, supervisors, operators and labourers will also be required.

Where requirements for these resources exceed in-house availability, private local contractors can be approached. Local authorities should ensure that they know where these resources can be supplied.

13. CONTACT DETAILS

13.1 PRIORITY NUMBERS

Organisation	Office Tel	Fax	Cell	Email
DEPARTMENT OF ENVIRONMENTAL AFFAIRS: MCPM				
Pollution Officers: Dr Yazeed Petersen (DD) Ms Feroza Albertus-Stanley (AD) Moses Mukota: Pollution Officer Equipment (Paarden Is.): Teboho Ntje	 021 819 2450 021 819 2457 021 819 2491 021 510 3957	 021 819 2445 021 819 2445 021 819 2445 021 510 3957	 083 530 3127 072 173 6234 074 800 4792 078 200 8442	 ypeterson@environment.gov.za feroza@environment.gov.za mmukota@environment.gov.za tntje@environment.gov.za
SAMSA				
SAMSA: EASTERN REGION. **Regional Manager:** Capt. Saroor Ali	 031 307 3006	031 306 4983 0866 153417	 071 686 9593	 sali@samsa.org.za
Durban: Mr. Grant Conway	031 307 1501	031 306 4983 0866 157055	082 449 6350	gconway@samsa.org.za
Richard's Bay: Mr. Thandi Mehlo	035 788 0068	035 788 0067	082 492 4404	tmehlo@samsa.org.za
SAMSA: SOUTHERN REGION **Regional Manager:** Capt N. Campbell	 041 582 2138	041 582 2130 0866 157 489	 083 309 6053	 ncampbell@samsa.org.za
East London: Capt P Kroon (PO)	043 722 4120	043 722 2264 086 615 8659	082 445 3166	pkroon@samsa.org.za
Port Elizabeth: Mr B Colenutt (PO)	041 585 0051	041 582 1213	082 445 3167	bcolenutt@samsa.org.za
Mossel Bay: Mr. Dave Manley	044 690 4201	044 691 1206 086 616 3370	082 477 1813	dmanley@samsa.org.za
SAMSA: WESTERN REGION	021 421 6170	021 419 0730 086 616 4104	083 412 8861	dcolly@samsa.org.za

Organisation	Office Tel	Fax	Cell	Email
Regional Manager: Capt Dave Colly				
Cape Town: Capt G Louw (PO) Mr. Barry Jubber (DPO)	021 421 6170	021 419 0730 086 696 9074	083 227 0721 082 6776630	glouw@samsa.org.za bjubber@samsa.org.za
Saldanha Bay: Mr. Martin Slabber	022 714 1612	022 714 3635 086 693 7084	082 789 6764	mslabber@samsa.org.za
Port Nolloth: Mr. Justin Coraizen	027 851 7695	027 851 7699	082 386 2141	jcoraizen@samsa.org.za
Centre of Sea Watch: Maritime Rescue Co-ordination Centre MRCC				
Head: Mr. Karl Otto	021 938 3317	021 938 3319 086 654 4742	082 812 2991	kotto@samsa.org.za
Capt Ravi Naicker	021 938 3310	021 938 3309	082 768 8401	rnaicker@samsa.org.za
Duty Controller: all hours	021 938 3300	021 938 3309		
SAMSA: Head Office: Head: Centre of Ships. Mr. Sobantu Tilayi Mr. Francis Chilalika(Operations Manager)	012 366 2600	012 366 2601 086 590 9056 086 615 0886	 071 608 6480 082 789 6802	 stilayi@samsa.org.za fchilalika@samsa.org.za
SAMSA Head Office CEO –	012 366 2600	012 366 2601		
ETHEKWINI MUNICIPALITY: Emergency Operations Centre - Durban				
All hours: Emergencies only	031 361 0000	031 307 3744		

13.2 RESPONSIBLE LOCAL AUTHORITIES

ORGANISATION	TEL	FAX	CELL	EMAIL
ETHEKWINI MUNICIPALITY Switchboard:	031 311 1111			
Preggie Moodley: Head: Beaches and Parks	031 322 4338 031 335 3707	031 337 9133	083 454 9820	moodleypreggie@durban.gov.za
Farouk Omargee: Manager: Aquatic Safety **Local Authority Co-ordinator**	031-322 4357	031-3325323	0834190196	OmarjeeF@durban.gov.za
Malcolm Canham: Disaster Management	031 367 0035	031 307 3744	083 461 5059	CanhamM@durban.gov.za
Billy Keeves: Disaster Management	031 367 0032	031 307 3744	083 461 5042	keeveswr@durban.gov.za
Roy Naicker: Beach Maintenance	031 322 4334	031 332 4169	083 384 6926	NaickerRoy@durban.gov.za
Andrew Mather: Coastal Management	031 311 7281	031 305 6952	083 3598 000	mathera@durban.gov.za
Godfrey Vella: Coastal Management	031 311 7256	031 305 6952		vellag@durban.gov.za
Debra Roberts: Head: Environmental Dept.	031 311 7527	031 311 7134	071 850 7234	robertsd@durban.gov.za
Meggan Lewis: Environmental Dept.	031 311 7920	031 311 7134	071 850 7233	LewisM@durban.gov.za
Chris Fennomore: Water	031 311 1111	031 311 8747	082 804 6386	ChristFe@dmws.durban.gov.za
Keith McKinnon: Solid waste	031 468 3272/8/9	031 468 5272	083 259 3686	KeithM@dmws.durban.gov.za
Bheki Khoza: Parks & Leisure	031 205 1405		083 388 2735	khozab@durban.gov.za
Bruce Blake: Parks & Leisure	031 311 5501		083 443 5372	BlakeB@durban.gov.za
Christo Swart	031 322 4035 031 311 4439		083 447 0590	Swartc@durban.gov.za

ORGANISATION	TEL	FAX	CELL	EMAIL
Randhir Sivapersad: Solid Waste	031 263 1371	031 263 0501	079 511 2978	RandhiSi@dmws.durban.gov.za
Nolwazi Mbatha: Emergency Control	031-3610017		082 706 2051	MbathaNol@durban.gov.za
Allan Pillay: Emergency Control	031-3610005	031 306 4490	083 461 5017	PillayAllan@durban.gov.za
Steve Hendrikse: Fire and Disaster Man.	031 361 0000		083 378 8739	hendrikses@durban.gov.za
TNPA: Durban Harbour Port Control (24 hours)	031 308 8260/1/2			
Switchboard	031 361 3755			
Capt Rufus Lekala: Harbour Master	031 361 8799	031 361 8920	083 658 2083	rufus.lekala@transnet.net
Gavin Hall: Risk Manager	031 361 8329	031 361 8355	083 440 6773	gavin.hall@transnet.net
Jeffrey Madingani: Environment	031 361 8547	031 361 8355	082 267 2995	Jeffrey.Madingani@transnet.net
Simphiwe Mazibuko	031 361 8495	031 361 8355	083 700 4085	Simphiwe.Mazibuko@transnet.net
Edward Mpungose: Pollution Department	031 361 6475		083 283 3506	Edward.Mpungose@transnet.net
EZEMVELO KZN WILDLIFE				
Thokozani Gumede: Marine Co-ordinator	031 274 1182		082 570 1446	gumedet@kznwildlife.com
George Nair:Marine Conservation Manager	031 274 1190		082 559 2855	nairg@kznwildlife.com
James Wood: District Manager (Durban Marine)	031 274 1151	086 664 5235 031 274 1174	082 559 2845	woodj@kznwildlife.com
Karl Bentley: Cluster Manager (Durban)			082 5592843	bentleyk@kznwildlife.com
Santosh Bachoo: Marine Ecologist	031 274 1192		083 783 9612	bachoos@kznwildlife.com

13.3 RELEVANT GOVERNMENT DEPARTMENTS

Organisation	Office Tel	Fax	Cell	Email
WEATHER FORECAST OFFICE: DURBAN 082 233 9500				
KZN DEPARTMENT OF AGRICULTURE, ENVIRONMENTAL AFFAIRS AND RURAL DEVELOPMENT				
Alfred Matsheke: Coastal Manager	033 355 9434	033 355 9614	082 330 2114	alfred.matsheke@kzndae.gov.za
Vanessa Maclou: eThekwini District	031 302 2870		082 461 7668	vanessa.maclou@kzndae.gov.za
Sarah Allan	033 355 9438	033 343 8470	082 415 7315	sarah.allan@kzndae.gov.za
Omar Parak	033 355 9438	033 355 9614	082 330 2136	omar.parak@kzndae.gov.za
SANDF: Regional Joint Task Force East				
Capt Adri Liebenberg: Environmental Services	012 339 5162		083 2997295	a3l@live.co.za
Lt Col Roshni Varaden: Env. KZN and E. Cape	031 451 0077	031 451 0086	083 784 2980	rfim.dbn@vodamail.co.za
Major R. A. Bosman	031 451 0017		084 222 5542	rabosman@gmail.com
Sgt Maj. Khumalo: Environment Army Support Base KZN	031 451 1848	031 451 0026	083 480 5675	No email
Naval Station Durban - CPO J. Govender	031 460 6271	031 460 6326	084 477 7211	jayce.gov@gmail.com
DAFF				
Keith Govender: (pollution vessels)	021 402 3079	021 402 3113	084 597 1147	KeithG@daff.gov.za
DEPT OF WATER AFFAIRS				
Raj Philip: Water Quality	031 3362741	031 3059915	0828089906	philipr@dwa.gov.za
Renelle Pillay: Water Quality	031 336 2742	031 305 9915	082 908 3748	pillayr@dwa.gov.za

Organisation	Office Tel	Fax	Cell	Email
SAPS: SEAPORT: DURBAN HARBOUR				
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Colonel Newton	031 319 2247	031 319 2086	079 523 4019	newtonmg@saps.org.za

13.4 SCIENTIFIC ADVISORY PERSONNEL AND I&AP'S

Organisation	Office Tel	Fax	Cell	Email
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SEA BIRD and MAMMAL RESCUE				
CROW: Sharon Tugwell: PR	031 462 1127	031 462 9700	071 676 8135	education@crowkzn.co.za
Sue-Ann Shutte: Wildlife Clinic Nurse	031 462 1127	031 462 9700	072 245 1707	education@crowkzn.co.za
SANCCOB (Seabirds)				
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Nola Parsons	021 557 6155	021 557 8804	084 822 0189	vet@sanccob.co.za
Dr Rob Crawford: Seabirds, DEA	021 402 3140	021 402 3330	082 578 1533	rcrawford@environment.gov.za
Bruce Dyer: Seabirds, DEA	021 402 3138	021 402 3330	082 953 3153	bdyer@environment.gov.za
Mike Meyer: Marine Mammals DEA	021 402 3173			mmeyer@environment.gov.za
KZN SHARKS BOARD:		031 566 0499		
Mthokazisi Radebe: CEO	031 566 0400		071 862 4404	moffatt@shark.co.za
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SAPREF: SBM: Cullum Love: Manager	031 205 9507	031 274 1102	076 354 8098	calum.love@sapref.com
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Rudy van der Elst: Director	031 328 8222			
uShaka Sea World: All hours	031 328 8222			
Gavin Drysdale: Operations	031 328 8222			

13.5 CONTRACTORS AND SERVICE PROVIDERS

SMIT AMANDLA MARINE				
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Paul Maclons	021 507 5777		082 909 2013	p.maclons@smit.com
Dave Murray	021 507 5777		082 909 9948	d.murray@smit.com
Captain Martin Wallace: Mooring Master DPFSO	031 205 9387		082 315 5590	wallacem@venturenet.co.za
Gordon Schoeman	031 205 9387		082 468 5950	Gordon@estonfarm.co.za
SHELTAM AVIATION: Surveillance aircraft				
Peter Roux (Cape Town office)	021 934 0964			
Peter Woods (Port Elizabeth office)	021 510 3341	021 510 3432	082 800 4560	peterroux@sheltam.com
Donovan Jordaan (Pilot)	041 581 4194	041 581 3413	083 452 7007	pwoods@sheltam.com
Thys du Toit (Pilot)			083 651 4863	sacoastguard@hotmail.co.za
To contact pilots in the air – emergency only			083 651 4863	sacoastguard@hotmail.co.za
Phone Air Traffic Control:				
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Cape Town	021 937 1116			
Overberg	028 425 4111			
George	044 801 8809			
Port Elizabeth	041 501 5900	041 501 5959		
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DRIZIT all hours Quentin Labuschage	0800 202 202 031 274 2300	 031 206 1189	 083 267 7799	drizit@iafrica.com
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