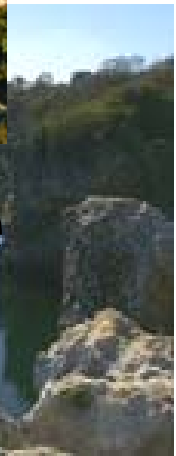




City of
Melville

Local Emergency Management Committee



City of Melville
Risk Register 2010



List of Acronyms

AWARE:	All West Australians Reducing Emergencies
BoM:	Bureau of Meteorology
CERM:	Community Emergency Risk Management
DCP:	Department for Child Protection
DEMC:	District Emergency Management Committee
DPI:	Department of Planning and Infrastructure
EM:	Emergency Management
EMA:	Emergency Management Australia
ERM:	Emergency Risk Management
FESA:	Fire and Emergency Services Authority
GA:	Geoscience Australia
HMA:	Hazard Management Agency
ISO:	International Standards Organisation
LEMC:	Local Emergency Management Committee
MRWA:	Main Roads WA
PPRR:	Prevention Preparation Response Recovery
SEMC:	State Emergency Management Committee
SES:	State Emergency Service
WAPol:	Western Australia Police

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1. Introduction

This document has been compiled to list and analyse the risks from natural and man made hazards that may be reasonably expected to impact on the City of Melville local government area. The identification of risks and the treatment of residual risk is a priority for the City of Melville Local Emergency Management Committee.

Purpose

This document forms the *'Risk Register'* for the City of Melville and also forms part of the local emergency management arrangements. This document will be considered at each meeting of the LEMC and will be updated from time-to-time as required.

The Emergency Risk Management (ERM) process forms the foundation of local emergency management planning and should be undertaken at least every five years in order to account for the changing face of the landscape and the community generally. The ERM process supports the negotiation and development of shared responsibilities necessary for the establishment of effective emergency management arrangements within local governments.

The current standard for analysing risk AS/NZS ISO 31,000:2009. The CERM project has also utilised the guidance of the following publications:

Western Australian Emergency Risk Management Guide (FESA/WALGA publication)

Australian Emergency Risk Management Manual 5 (Emergency Management Australia publication)

There are measurable benefits to be derived by the local government from conducting a managed ERM process including:

- Establishment of a formal decision making process;

- Fostering the involvement of the local community in the risk management process;

- Engaging the assistance and partnership of a wide range of Hazard Management Agencies, Non-government organisations and service providers;

- Establishing an ongoing cycle of review.

The City of Melville conducted a self funded risk management processes in 2010 which assisted in the establishment of the Local Emergency Management Arrangements. The current standard for analysing risk AS/NZS ISO 31,000:2009. The CERM project has also utilised the guidance of the following publications:

Western Australian Emergency Risk Management Guide (FESA/WALGA publication)

Australian Emergency Risk Management Manual 5 (Emergency Management Australia publication)

Recommendations

The following recommendations were made by the LEMC resulting from this study and these include:

Recommendation 1

That the City of Melville LEMC conducts a review of its Local Emergency Management Arrangements and ensures that information gathered through the CERM process is incorporated within those arrangements.

Recommendation 2

Following the review and update of the Local Emergency Management Arrangements, a review is undertaken of the City of Melville risk treatment schedule as identified in the CERM process.

Recommendation 3

That the City of Melville Local Emergency Management Committee engages in a complete review of its risk profile in 2014/15.

Recommendation 4

That the Local Emergency Management Committee ensure that the City of Melville Emergency Risk Register forms part of the business plan of the LEMC and is regularly reviewed.

Recommendation 5

That this report be posted on the City of Melville Website as a public document.

Legislation and Policy

The Emergency Management Act 2005 establishes the role of local government in emergency management planning for their community. Emergency Risk Management forms the basis of local government emergency management planning and the risk identification and analysis process should be conducted at least every five years to ensure that natural and man made hazards are correctly identified and mitigation strategies are adopted. The City of Melville has always had a proactive stance towards emergency planning and protection of the community it represents.

2. Identify Risks

Information concerning risks is generated by examining the potential for sources of risk to impact on an element at risk in the community. Each source of risk needs to be first identified as being one that has the potential to impact on the community.

A number of risks as identified by State emergency management policy were discussed by the committee in relation to the following:

- Location of the City of Melville relevant to environmental impacts;

- the demography;

- the local economy;

- council services and facilities;

- Previous emergencies and historical information.

The Risk Assessment Process

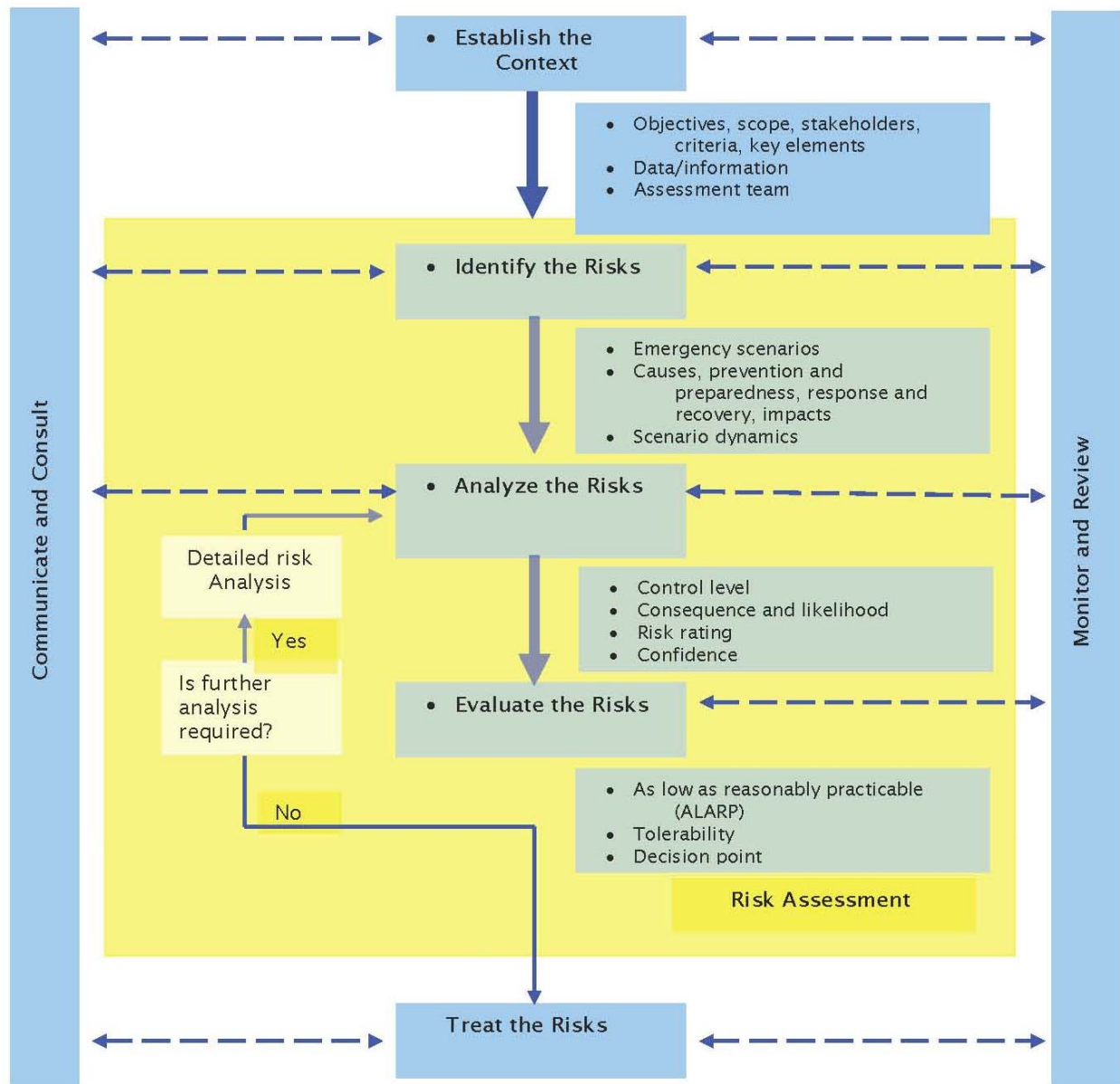


Table 5 - Risk Assessment Methodology Diagram

Risk Evaluation Criteria

The risk evaluation criteria are an important aspect of the risk process and assist the working group to make informed assessments of the prioritization of risks. Risk evaluation criteria assist to establish a clear priority where two risks have been evaluated as having the same likelihood and consequence level. The evaluation criteria were based on several considerations including; people, property, environment, economy, industry, infrastructure and social setting.

ELEMENTS AT RISK	SCOPE	RISK EVALUATION CRITERIA	PRIORITY
People	Life/ Injury/health	Any accident or incident that causes death, serious injury or harms the health of people is unacceptable	1
Infrastructure	Lifelines e.g. power water sewerage, gas or communications	Any accident or incident that causes loss of or damage to infrastructure is unacceptable.	2
Economy	Private enterprises, government sector financial loss, loss of revenue.	Any accident or incident that causes loss to the economy is unacceptable.	3
Public Administration	Local Government ability to continue normal services	Any accident/incident that affects public administration is unacceptable	4
Social Setting	Community support infrastructure, quality of life, reduction of services	Any accident or incident that causes loss of or damage to the social/cultural structures is unacceptable.	5
Environment	Eco systems, species and landscapes, environmental damage	Any accident or incident that causes loss of or damage to the environment is not acceptable	6

Table 4 – Risk Evaluation Criteria

Community Consultation

The project sought in the first instance to survey the community to gain an insight into what the community saw as sources of risks that may impact on the City of Melville and what affect those sources of risk may have if they were to impact on the local community. The community survey was sent out to all dwellings and businesses within the local government area. A total of 4,400 surveys were circulated with a return of 924 completed surveys representing 21% of the total. The community identified the following sources of risk as having the greatest likelihood of impacting on the City of Melville based on a rating scale of 1 being low likelihood and 6 being high likelihood:

<i>Source of Risk</i>	<i>Average Rating</i>
<i>Severe storm event</i>	4.19
<i>Road Transport Emergency</i>	3.76
<i>Building Fires</i>	3.70
<i>Critical Infrastructure Failure</i>	3.57
<i>Hazardous Materials Spills</i>	3.38
<i>Bushfire</i>	3.10

Table 6 - Risk Identification Matrix

The survey also asked the respondents to assess the impact the source of risk might have on the elements at risk within the community. The Project Team considered that hazardous materials should also be examined along with road transport emergencies.

3. Analyse and Evaluate Risk

Analysis of the identified risks involves conducting a qualitative and quantitative analysis to enable the group to understand the dynamics of each of the sources of risk and establish the level of risk the local government was exposed to for each identified hazard. The best method of coming to a consensus as to how the local government might be impacted by each source of risk was to conduct ERM workshops.

Risk Analysis Workshops

The City of Melville conducted a single multi-hazard risk analysis workshop in May 2010. The analysis of the identified risks was divided over two half day workshops as described below. In order to capture the views and comments of each participant a workshop workbook was produced. These workbooks proved to be an efficient way of ensuring that the views and comments of workshop attendees were captured and recorded. The Workshop analysed the following sources of risk:

- Severe Storm

- Bush Fire

- Structure Fire

- Road Transport

- Hazardous Materials

Sources of Risk

Both workshops identified and explored the sources of risk to the community as identified by the community risk survey. Each source of risk description statement identified the intensity, extent to which the local community may be affected, the likelihood of the occurrence and the time frame including warning times and duration.

For each identified source of risk, a matrix was prepared that described in detail the source of risk and how it might impact upon the City of Melville. In addition the treatments currently applied to the source of risk by the Hazard management Agency, the local government and the support organisations identified what was already being done to minimise the impact the source of risk may have on the community.

The sources of risk as selected by the LEMC for analysis are fully described in the following tables:

Description of Source of Risk

Severe Storm

Description:

Severe storm events affect the Perth metropolitan area including the City of Melville on an annual basis. The Bureau of Meteorology ensures that severe weather warnings are available with sufficient lead time to ensure community preparedness. Storms can occur throughout the year but are normally confined to the period between May and August. Wind gust may be common up to 100 km/h and damage to homes, business and the environment from hail and flash flooding can occur. There may also be significant disruption caused to lifelines such as power in the form of power outages for extended periods which has the flow on effect including short term high risk contamination of river front areas.

Mitigation Strategies:

The Bureau of Meteorology produces daily weather forecasts and predictions for public awareness. Public awareness is also undertaken by the media and FESA by promoting hazard reduction. Local government contributes to hazard reduction through bulk rubbish collections to reduce loose items around properties, conducts street tree maintenance to reduce power line interference.

Description of Source of Risk

Bush Fire

Description:

Bush Fires can occur annually within the local government area of Melville. Within the City pockets of bushland reserve exists that are subject to Bushfire on an annual basis. These bushland areas are predominantly grasslands with associations of trees and scrub. Bushfires are ignited either naturally by lightning, or by human activity. Weather conditions that affect the intensity of a bushfire are predominantly experienced between November and April. Bush fires can be very intense depending upon weather conditions and wind factors and can impact on the urban environment threatening homes and other structures where bush land and urban areas exist together. Areas that may be affected by bush fire in the City of Melville include Wireless Hill Park, Piney Lakes Reserve, Booragoon Lake, Blue Gum Reserve, Richard Lewis Park, Bateman Reserve and Ken Hurst park, Pt Walter Reserve and Black Wall Reach.

Mitigation Strategies:

Hazard reduction work is required to be undertaken prior to December and maintained by property owners from November through to April every year. The Bush Fires Act 1954 legislates for the control of fire which ultimately reduces the potential occurrence of Bush Fire. Bureau of Meteorology–weather data (rainfall, wind, temp, RH, lightning occurrence, curing data. FESA provides a fire fighting capacity through the Fire and Rescue Service. Local government planning policies ensure that a buffer is maintained between bushland areas and buildings.

Description of Source of Risk

Structure Fire (Urban)

Description:

Structure fires occur occasionally within the City of Melville with varying degrees of damage incurred. The fires can involve either commercial or residential structures at anytime. Structure fires can begin from a source within the structure (e.g. candle in a house, chemical reaction in a factory, etc) or from an external source (e.g. Bush Fire, other structure fire, etc). They are generally isolated incidents though they may impact on neighbouring structures. Structure fires can become very intense extremely quickly, dependant on fuel type and. Structure fire can occur at any time of day or night and can be controlled very quickly or dependent on fuel source may burn over a number of days.

Mitigation Strategies:

FESA and the City of Melville promote community awareness (e.g. candle education, installation of smoke alarms, etc) and hazard reduction (e.g. internally: keep heating appliances away from flammable goods; externally: reduce fuel loads around structures) within and around structures. Synergy has a Safety Watch-it Van that is used within the community as a service that offers free safety checks on a variety of electrical appliances. The Building Code of Australia enables the achievement and maintenance of acceptable standards of structural sufficiency, smoke alarm requirements, safety (including safety from fire), health and amenity throughout

Description of Source of Risk

Road Transport Emergency

Description:

Road transport emergencies involving interaction between heavy vehicles and other traffic can occur and any hour of the day or night but predominantly during day light hours when heavy vehicles are prevalent on major roads within the City of Melville. The City of Melville has four major heavy vehicle routes within its boundaries; Leach Highway, Canning Highway, Roe Highway, Stock Road and the Kwinana Freeway. Heavy vehicle accidents can cause death and serious injury especially when they involve smaller vehicles and passenger vehicles such as buses. Heavy fuel tankers ply the major routes through the city carrying toxic chemicals and fuels along with livestock carriers. In a roll over situation, these loads can present dangerous situations for the public and responders.

Mitigation Strategies:

Heavy vehicles are restricted to certain route through the City of Melville. Leach Highway is a designated heavy vehicle route between the port of Fremantle and the industrial areas of O'Connor, Canning vale and Welshpool. The carriage of dangerous goods is controlled by the DoCEP Resources Safety Division. WA Police through the Road safety Council and local programs such as Road Wise promote road safety messages and strategies.

Description of Source of Risk

Hazardous Material Spills

Description:

Hazardous materials are transported through the City of Melville at all times of the day and night through heavily populated suburban areas. Although strict controls are placed on the transporting and storage of these goods, there is always the likelihood that a spill of some kind will occur. Hazardous materials in the form of bulk toxic industrial chemicals, fuels and oils are transported on the major roads within the City of Melville between the port of Fremantle and heavy industrial areas of O'Connor, Welshpool and Canningvale. Industrial chemicals are also stored in diverse factories and business premises within the industrial parks. These chemicals are largely unknown unless they are of reportable quantities. Hazardous materials spills can impact on the environment and cause harm to public health through toxic plumes carried by the prevailing winds.

Mitigation Strategies:

The carriage of dangerous goods is controlled by the DoCEP Resources Safety Division. Storage of dangerous goods is controlled under the Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007 for prescribed levels of dangerous goods. The Dangerous Goods Safety (Major Hazard Facilities) Regulations 2007 applies to those sites where the type and quantity of dangerous goods have the potential to cause serious damage. Westplan HAZMAT provides the State response to hazardous materials spills. FESA is the HMA for hazardous materials spills.

Assessment Workshop Risk Register

The following risk statements were presented at the analysis workshops and rated for likelihood and consequence. A level of risk was assigned to each statement and an action priority dependent upon the community risk evaluation criteria.

SEVERE STORM

<i>Risk Statement</i>	<i>Likelihood</i>	<i>Consequence</i>	<i>Level of Risk</i>	<i>Action Priority</i>
There is a risk that a severe storm will cause death	Possible	Minor	Low	4
There is a risk that a severe storm will cause loss or long term damage to the environment	Unlikely	Moderate	Medium	2
There is a risk that a severe storm will affect the economy of the community	Likely	Minor	Medium	3
There is a risk that a severe storm will affect the operation of the public administration	Possible	Minor	Low	6
There is a risk that a severe storm will affect the social setting of the community	Unlikely	Minor	Low	7
There is a risk that a severe storm will cause damage to or destroy infrastructure	Almost Certain	Moderate	High	1
There is a risk that a severe storm will cause serious injury to people	Possible	Minor	Low	5

Bush Fire

<i>Risk Statement</i>	<i>Likelihood</i>	<i>Consequence</i>	<i>Level of Risk</i>	<i>Action Priority</i>
There is a risk that a bush fire will cause death	Likely	Minor	Medium	2
There is a risk that a bush fire will cause loss or long term damage to or destroy the environment	Rare	Minor	Low	6
There is a risk that a bush fire will affect the economy of the community	Unlikely	Moderate	Medium	4
There is a risk that a bush fire will affect the operation of the public administration	Unlikely	Minor	Low	7
There is a risk that a bush fire will affect the social setting of the community	Possible	Minor	Low	5
There is a risk that a bush fire will cause damage to or destroy infrastructure	Likely	Moderate	High	1
There is a risk that a bushfire will cause serious injury to people	Almost Certain	Minor	Medium	3

Structure Fire

<i>Risk Statement</i>	<i>Likelihood</i>	<i>Consequence</i>	<i>Level of Risk</i>	<i>Action Priority</i>
There is a risk that a structure fire will cause death	Likely	Minor	Medium	2
There is a risk that a structure fire will cause loss of or long term damage to the environment	Unlikely	Minor	Low	6
There is a risk that a structure fire will affect the economy of the community	Possible	Moderate	Medium	4
There is a risk that a structure fire will affect the operation of the public administration	Unlikely	Minor	Low	7
There is a risk that a structure fire will affect the social setting of the community	Possible	Minor	Low	5
There is a risk that a structure fire will cause damage to or destroy infrastructure	Likely	Moderate	High	1
There is a risk that a structure fire will cause serious injury to people	Almost Certain	Minor	Medium	3

Road Transport Emergencies

<i>Risk Statement</i>	<i>Likelihood</i>	<i>Consequence</i>	<i>Level of Risk</i>	<i>Action Priority</i>
There is a risk that a road transport emergency will cause death	Likely	Moderate	High	1
There is a risk that a road transport emergency will cause loss of or long term damage to the environment	Almost Certain	Moderate	High	2
There is a risk that a road transport emergency will affect the economy of the community	Possible	Minor	Low	4
There is a risk that a road transport emergency will affect the operation of the public administration	Unlikely	Insignificant	Low	6
There is a risk that a road transport emergency will affect the social setting of the community	Possible	Minor	Low	5
There is a risk that a road transport emergency will cause damage to or destroy infrastructure	Unlikely	Moderate	Medium	3
There is a risk that a road transport emergency will cause serious injury to people	Almost Certain	Moderate	High	1

Hazardous Materials Spills

<i>Risk Statement</i>	<i>Likelihood</i>	<i>Consequence</i>	<i>Level of Risk</i>	<i>Action Priority</i>
There is a risk that a hazardous materials spill will cause death or injury to people	Likely	Moderate	High	1
There is a risk that a hazardous materials spill will cause loss of or long term damage to the environment	Almost Certain	Moderate	High	2
There is a risk that a hazardous materials spill will affect the economy of the community	Possible	Minor	Low	4
There is a risk that a hazardous materials spill will affect the operation of the public administration	Unlikely	Insignificant	Low	6
There is a risk that a hazardous materials spill will affect the social setting of the community	Possible	Minor	Low	5
There is a risk that a hazardous materials spill will cause damage to or destroy infrastructure	Unlikely	Moderate	Medium	3

4. 7. City of Melville Risk Register

The City of Melville Risk Register is the product of the workshop data and consultation with the LEMC. The Risk Register will become part of the local emergency management arrangements for consideration and action by the LEMC along with the Risk Treatment Schedule.

CITY OF MELVILLE - RISK REGISTER

RISK No01/10.	RISK STATEMENT	LIKELIHOOD RATING	CONSEQUENCE RATING	LEVEL OF RISK	PRIORITY (Workshop)	PRIORITY (LEMC)	FINAL	TREAT Y/N
01/10	There is a risk that a severe storm will cause damage to or destroy infrastructure within the City of Melville. Winter storms including tornados can cause significant damage to the City infrastructure such as buildings, roads, footpaths and drainage systems.	ALMOST CERTAIN	MODERATE	HIGH	1	4	4	YES
02/10	There is a risk that bush fires in reserves and parkland within the boundaries of the City of Melville will cause damage to or destroy the environment. Bush fires can cause the loss of endangered species of plants and animals. The loss of vegetation through fire can also cause serious erosion of topsoil.	ALMOST CERTAIN	MODERATE	HIGH	1	5	5	NO
03/10	There is a risk that structure fires in homes, factories and buildings within the City of Melville will cause damage to or destroy infrastructure. Large structure fires if intense enough may have the capacity to damage roads and footpaths within the City. Structure fires if they occur in City owned buildings may also cause loss of those facilities.	UNLIKELY	MODERATE	MEDIUM	1	The LEMC is satisfied that the risk is as low as reasonably practicable		NO

CITY OF MELVILLE - RISK REGISTER

RISK No01/10.	RISK STATEMENT	LIKELIHOOD RATING	CONSEQUENCE RATING	LEVEL OF RISK	PRIORITY (Workshop)	PRIORITY (LEMC)	FINAL	TREAT Y/N
04/10	There is a risk that a road transport emergency involving the interaction between heavy vehicles and other road traffic on major transport routes within the City of Melville will cause serious injury to people. Heavy transport vehicles ply major roads within the City of Melville alongside private vehicles and passenger transport vehicles.	ALMOST CERTAIN	MODERATE	HIGH	1		The LEMC is satisfied that the risk is as low as reasonably practicable	NO
05/10	There is a risk that a hazardous materials spill has the potential to impact upon densely populated urban areas within the City of Melville and will cause death or serious injury to people. Hazardous materials particularly fuels often dispensed within the suburban areas of Melville may impact on those areas through the emission of toxic fumes should ignition occur.	POSSIBLE	MODERATE	MEDIUM	1	1	1	YES
06/10	There is a risk that a hazardous materials spill that occurs within the City of Melville will cause damage to or destroy the environment through direct contact with the soil or via the drainage systems and can be hard to contain.	ALMOST CERTAIN	MODERATE	HIGH	2	5	5	YES

CITY OF MELVILLE - RISK REGISTER

RISK No01/10.	RISK STATEMENT	LIKELIHOOD RATING	CONSEQUENCE RATING	LEVEL OF RISK	PRIORITY (Workshop)	PRIORITY (LEMC)	FINAL	TREAT Y/N
07/10	There is a risk that a severe storm that impacts on the City of Melville will cause loss or damage to the environment and ecosystems. Severe storm events such as hail storms and tornados may cause the loss of or damage to trees and plant life in sensitive areas.	Possible	Moderate	Medium	2	6	6	YES
08/10	There is a risk that a severe storm will affect the economy of the community by impacting on small businesses and industry within the City of Melville.	Likely	Minor	Medium	3		The LEMC is satisfied that the risk is as low as reasonably practicable	NO
09/10	There is a risk that structure fires that occur in private dwellings and buildings within the City of Melville will cause death.	Likely	Minor	Medium	2	2	2	YES
10/10	There is a risk that structure fires that occur in private dwellings and buildings within the City of Melville will cause serious injury to people.	Almost Certain	Minor	Medium	3	3	3	YES

11/10	There is a risk that structure fires that occur in private dwellings and buildings within the City of Melville will affect the economy of the community.	Possible	Moderate	Medium	4		The LEMC is satisfied that the risk is as low as reasonably practicable	NO
12/10	There is a risk that a road transport emergency involving the interaction between heavy vehicles and other road traffic on major transport routes within the City of Melville will cause death. Heavy transport vehicles ply major roads within the City of Melville alongside private vehicles and passenger transport vehicles.	Almost Certain	Minor	Medium	2		The LEMC is satisfied that the risk is as low as reasonably practicable	NO
13/10	There is a risk that a hazardous materials spill will cause damage to or destroy infrastructure. City drainage systems including storm water sumps and drainage outfalls may become contaminated and require reconditioning.	Unlikely	Moderate	Medium	3	7	7	YES

CITY OF MELVILLE RISK TREATMENT SCHEDULE

Risk No. 01/10

RISK STATEMENT:

There is a risk that a severe storm will cause damage to or destroy infrastructure within the City of Melville. Winter storms including tornados can cause significant damage to the City infrastructure such as buildings, roads, footpaths and drainage systems.

DATE:

Likelihood	Consequence	Level of Risk	Risk Priority
Almost Certain	Moderate	High	4

Vulnerability Data:

Severe storm events affect the Perth metropolitan area including the City of Melville on an annual basis. The Bureau of Meteorology ensures that severe weather warnings are available with sufficient lead time to ensure community preparedness. Storms can occur throughout the year but are normally confined to the period between May and August. Wind gust may be common up to 100 km/h and damage to homes, business and the environment from hail and flash flooding can occur. There may also be significant disruption caused to lifelines such as power in the form of power outages for extended periods which has the flow on effect including short term high risk contamination of river front areas.

Agency/Group/Persons with emergency risk management responsibilities:

The Bureau of Meteorology produces daily weather forecasts and predictions for public awareness. Public awareness is also undertaken he media and FESA by promoting hazard reduction. Local government contributes to hazard reduction through bulk rubbish collections to reduce loose items around properties, conducts street tree maintenance to reduce power line interference, and carries out regular maintenance of local drainage systems.

Existing prevention & preparedness strategies	Agency
Annual maintenance schedules for local drainage systems. Local roads and footpath maintenance schedules	City of Melville
Suggested prevention & preparedness strategies	Agency
Street Tree pruning programs Provision of underground power to older suburbs within the City of Melville.	City of Melville City of Melville/ Western Power

Treatment Schedule

Risk No. 02/10			
RISK STATEMENT: There is a risk that bush fires in reserves and parkland within the boundaries of the City of Melville will cause damage to or destroy the environment. Bush fires can cause the loss of endangered species of plants and animals. The loss of vegetation through fire can also cause serious erosion of topsoil.		DATE: 19/07/2010	
Likelihood	Consequence	Level of Risk	Risk Priority
Almost Certain	Moderate	High	5
Vulnerability Data: Bush Fires can occur annually within the local government area of Melville. Within the City pockets of bushland reserve exists that are subject to Bushfire on an annual basis. These bushland areas are predominantly grasslands with associations of trees and scrub. Bushfires are ignited either naturally by lightning, or by human activity. Weather conditions that affect the intensity of a bushfire are predominantly experienced between November and April. Bush fires can be very intense depending upon weather conditions and wind factors and can and impact on the urban environment threatening homes and other structures where bush land and urban areas exist together. Areas that may be affected by bush fire in the City of Melville include Wireless Hill Park, Piney Lakes Reserve, Booragoon Lake, Blue Gum Reserve, Richard Lewis Park, Bateman Reserve and ken Hurst park, Pt Walter Reserve and Black Wall Reach.			
Agency/Group/Persons with emergency risk management responsibilities: There is continual public awareness regarding the consequences and reduction methods of Bush Fire throughout the State every year. Hazard reduction work is required to be undertaken prior to December and maintained by property owners from November through to April every year. The Bush Fires Act 1954 legislates for the control of fire which ultimately reduces the potential occurrence of Bush Fire. Bureau of Meteorology– weather data (rainfall, wind, temp, RH, lightning occurrence, curing data. Other data and information is also available. FESA provides a fire fighting capacity through the Fire and Rescue Service. Local government planning policies ensure that a buffer is maintained between bushland areas and buildings. Local Government programs such as bush fire watch and Eyes on the Street.			
Existing prevention & preparedness strategies		Agency	
Enforcement of fire breaks on both public land and private land. FESA Prevention & preparedness policy FESA Community Safety awareness programs		City of Melville FESA	
Suggested prevention & preparedness strategies		Agency	
Fuel load management and weed control Installation of new fire access tracks Upgrading of existing fire access tracks.		City of Melville	
Treatment Schedule -			

Risk No.
03/10

RISK STATEMENT:
There is a risk that structure fires in homes, factories and buildings within the City of Melville will cause damage to or destroy infrastructure. Large structure fires if intense enough may have the capacity to damage roads and footpaths within the City. Structure fires if they occur in City owned buildings may also cause loss of those facilities.

DATE: 19/07/2010

Likelihood	Consequence	Level of Risk	Risk Priority
Unlikely	Moderate	Medium	Acceptable Risk

Vulnerability Data:
Structure fires occur occasionally within the City of Melville with varying degrees of damage incurred. The fires can involve either commercial or residential structures at anytime. Structure fires can begin from a source within the structure (e.g. candle in a house, chemical reaction in a factory, etc) or from an external source (e.g. Bush Fire, other structure fire, etc). They are generally isolated incidents though they may impact on neighbouring structures. Structure fires can become very intense extremely quickly, dependant on fuel type and. Structure fire can occur at any time of day or night and can be controlled very quickly or dependent on fuel source may burn over a number of days.

Agency/Group/Persons with emergency risk management responsibilities:
FESA and the City of Melville promote community awareness (e.g. candle education, installation of smoke alarms, etc) and hazard reduction (e.g. internally: keep heating appliances away from flammable goods; externally: reduce fuel loads around structures) within and around structures. Synergy has a Safety Watch-it Van that is used within the community as a service that offers free safety checks on a variety of electrical appliances. The Building Code of Australia enables the achievement and maintenance of acceptable standards of structural sufficiency, smoke alarm requirements, safety (including safety from fire), health and amenity throughout Australia.

Existing prevention & preparedness strategies	Agency
Building Code of Australia compliance for some alarms. Public Education FESA Prevention & Preparedness policy	City of Melville/Builders/Real Estate Agencies FESA FESA
Suggested prevention & preparedness strategies	Agency
Public campaign to reduce/discourage the use of solid fuel heaters in homes	City of Melville

Treatment Schedule

Risk No.
04/10

RISK STATEMENT:
There is a risk that a road transport emergency involving the interaction between heavy vehicles and other road traffic on major transport routes within the City of Melville will cause serious injury to people. Heavy transport vehicles ply major roads within the City of Melville alongside private vehicles and passenger transport vehicles.

DATE: 19/07/2010

Likelihood	Consequence	Level of Risk	Risk Priority
Almost certain	Moderate	High	Acceptable Risk

Vulnerability Data:
Road transport emergencies involving interaction between heavy vehicles and other traffic can occur and any hour of the day or night but predominantly during day light hours when heavy vehicles are prevalent on major roads within the City of Melville. The City of Melville has four major heavy vehicle routes within its boundaries; Leach Highway, Canning Highway, Roe Highway, Stock Road and the Kwinana Freeway. Heavy vehicle accidents can cause death and serious injury especially when they involve smaller vehicles and passenger vehicles such as buses. Heavy fuel tankers ply the major routes through the city carrying toxic chemicals and fuels along with livestock carriers. In a roll over situation, these loads can present dangerous situations for the public and responders.

Agency/Group/Persons with emergency risk management responsibilities:
Heavy vehicles are restricted to certain route through the City of Melville. Leach Highway is a designated heavy vehicle route between the port of Fremantle and the industrial areas of O'Connor, Canning vale and Welshpool. The carriage of dangerous goods is controlled by the DoCEP Resources Safety Division. WA Police through the Road safety Council and local programs such as Road Wise promote road safety messages and strategies.

Existing prevention & preparedness strategies	Agency
Continual upgrade program for local roads and footways Driver education Heavy haulage routes	City of Melville/Main Roads WA WAPol/Road Safety Council City of Melville/Main Roads WA
Suggested prevention & preparedness strategies	Agency
Improved road maintenance programs	City of Melville

Treatment Schedule

Risk No.
05/10

RISK STATEMENT: There is a risk that a hazardous materials spill has the potential to impact upon densely populated urban areas within the City of Melville and will cause death or serious injury to people. Hazardous materials particularly fuels often dispensed within the suburban areas of Melville may impact on those areas through the emission of toxic fumes should ignition occur.	DATE: 19/07/2010
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Likelihood	Consequence	Level of Risk	Risk Priority
Possible	Moderate	Medium	1

Vulnerability Data:
Hazardous materials are transported through the City of Melville at all times of the day and night through heavily populated suburban areas. Although strict controls are placed on the transporting and storage of these goods, there is always the likelihood that a spill of some kind will occur. Hazardous materials in the form of bulk toxic industrial chemicals, fuels and oils are transported on the major roads within the City of Melville between the port of Fremantle and heavy industrial areas of O'Connor, Welshpool and Canningvale. Industrial chemicals are also stored in diverse factories and business premises within the industrial parks. These chemicals are largely unknown unless they are of reportable quantities. Hazardous materials spills can impact on the environment and cause harm to public health through toxic plumes carried by the prevailing winds.

Agency/Group/Persons with emergency risk management responsibilities:
The carriage of dangerous goods is controlled by the DoCEP Resources Safety Division. Storage of dangerous goods is controlled under the Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007 for prescribed levels of dangerous goods. The Dangerous Goods Safety (Major Hazard Facilities) Regulations 2007 applies to those sites where the type and quantity of dangerous goods have the potential to cause serious damage. Westplan HAZMAT provides the State response to hazardous materials spills. FESA is the HMA for hazardous materials spills.

Existing prevention & preparedness strategies	Agency
Transport of dangerous goods and hazardous materials is controlled Safe routes are designated Road maintenance programs	
Suggested prevention & preparedness strategies	Agency
Ensure that an adequate and tested evacuation plan is in place for the community	Police/FESA/City of Melville

Treatment Schedule

Risk No.
06/10

RISK STATEMENT: There is a risk that a hazardous materials spill that occurs within the City of Melville will cause damage to or destroy the environment through direct contact with the soil or via the drainage systems and can be hard to contain.	DATE: 19/07/2010
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Likelihood	Consequence	Level of Risk	Risk Priority
Almost certain	Moderate	High	5

Vulnerability Data:
Hazardous materials are transported through the City of Melville at all times of the day and night through heavily populated suburban areas. Although strict controls are placed on the transporting and storage of these goods, there is always the likelihood that a spill of some kind will occur. Hazardous materials in the form of bulk toxic industrial chemicals, fuels and oils are transported on the major roads within the City of Melville between the port of Fremantle and heavy industrial areas of O'Connor, Welshpool and Canningvale. Industrial chemicals are also stored in diverse factories and business premises within the industrial parks. These chemicals are largely unknown unless they are of reportable quantities. Hazardous materials spills can impact on the environment and cause harm to public health through toxic plumes carried by the prevailing winds.

Agency/Group/Persons with emergency risk management responsibilities:
The carriage of dangerous goods is controlled by the DoCEP Resources Safety Division. Storage of dangerous goods is controlled under the Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007 for prescribed levels of dangerous goods. The Dangerous Goods Safety (Major Hazard Facilities) Regulations 2007 applies to those sites where the type and quantity of dangerous goods have the potential to cause serious damage. Westplan HAZMAT provides the State response to hazardous materials spills. FESA is the HMA for hazardous materials spills.

Existing prevention & preparedness strategies	Agency
Drainage maintenance programs	City of Melville
Suggested prevention & preparedness strategies	Agency
Provide the updated Meta Data for the City controlled drains to Landgate and FESA for uploading into the Slip-EM program.	City of Melville/FESA

Treatment Schedule
As soon as practicable

Risk No. 07/10

RISK STATEMENT: There is a risk that a severe storm that impacts on the City of Melville will cause loss or damage to the environment and ecosystems. Severe storm events such as hail storms and tornados may cause the loss of or damage to trees and plant life in sensitive areas.	DATE: 19/07/2010
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Likelihood	Consequence	Level of Risk	Risk Priority
Possible	Moderate	Medium	6

Vulnerability Data:
Severe storm events affect the Perth metropolitan area including the City of Melville on an annual basis. The Bureau of Meteorology ensures that severe weather warnings are available with sufficient lead time to ensure community preparedness. Storms can occur throughout the year but are normally confined to the period between May and August. Wind gust may be common up to 100 km/h and damage to homes, business and the environment from hail and flash flooding can occur. There may also be significant disruption caused to lifelines such as power in the form of power outages for extended periods which has the flow on effect including short term high risk contamination of river front areas.

Agency/Group/Persons with emergency risk management responsibilities:
The Bureau of Meteorology produces daily weather forecasts and predictions for public awareness. Public awareness is also undertaken he media and FESA by promoting hazard reduction. Local government contributes to hazard reduction through bulk rubbish collections to reduce loose items around properties, conducts street tree maintenance to reduce power line interference, and carries out regular maintenance of local drainage systems.

Existing prevention & preparedness strategies	Agency
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Parkland and wetland management plans and strategies	
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Suggested prevention & preparedness strategies	Agency
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Supply a number of portable generation plants available for distribution to sewerage and waste water pumping stations in the event of power failures impacting on those facilities to prevent untreated waste water entering the river.	City of Melville/Water Corp
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Treatment Schedule

Risk No. 08/10			
RISK STATEMENT: There is a risk that a severe storm will affect the economy of the community by impacting on small businesses and industry within the City of Melville.		DATE: 19/07/2010	
Likelihood	Consequence	Level of Risk	Risk Priority
Likely	Minor	Medium	Acceptable Risk
Vulnerability Data: Severe storm events affect the Perth metropolitan area including the City of Melville on an annual basis. The Bureau of Meteorology ensures that severe weather warnings are available with sufficient lead time to ensure community preparedness. Storms can occur throughout the year but are normally confined to the period between May and August. Wind gust may be common up to 100 km/h and damage to homes, business and the environment from hail and flash flooding can occur. There may also be significant disruption caused to lifelines such as power in the form of power outages for extended periods which has the flow on effect including short term high risk contamination of river front areas.			
Agency/Group/Persons with emergency risk management responsibilities: The Bureau of Meteorology produces daily weather forecasts and predictions for public awareness. Public awareness is also undertaken he media and FESA by promoting hazard reduction. Local government contributes to hazard reduction through bulk rubbish collections to reduce loose items around properties, conducts street tree maintenance to reduce power line interference, and carries out regular maintenance of local drainage systems.			
Existing prevention & preparedness strategies		Agency	
Suggested prevention & preparedness strategies		Agency	
Provision of underground power to older suburbs within the City of Melville. Street tree pruning programs.		City of Melville/Western Power City of Melville	
Treatment Schedule			

Risk No. 09/10

RISK STATEMENT: There is a risk that structure fires that occur in private dwellings and buildings within the City of Melville will cause death .	DATE: 19/07/2010
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Likelihood	Consequence	Level of Risk	Risk Priority
Likely	Minor	Medium	2

Vulnerability Data:
Structure fires occur occasionally within the City of Melville with varying degrees of damage incurred. The fires can involve either commercial or residential structures at anytime. Structure fires can begin from a source within the structure (e.g. candle in a house, chemical reaction in a factory, etc) or from an external source (e.g. Bush Fire, other structure fire, etc). They are generally isolated incidents though they may impact on neighbouring structures. Structure fires can become very intense extremely quickly, dependant on fuel type and. Structure fire can occur at any time of day or night and can be controlled very quickly or dependent on fuel source may burn over a number of days.

Agency/Group/Persons with emergency risk management responsibilities:
FESA and the City of Melville promote community awareness (e.g. candle education, installation of smoke alarms, etc) and hazard reduction (e.g. internally: keep heating appliances away from flammable goods; externally: reduce fuel loads around structures) within and around structures. Synergy has a Safety Watch-it Van that is used within the community as a service that offers free safety checks on a variety of electrical appliances. The Building Code of Australia enables the achievement and maintenance of acceptable standards of structural sufficiency, smoke alarm requirements, safety (including safety from fire), health and amenity throughout Australia.

Existing prevention & preparedness strategies	Agency
FESA Prevention & preparedness policy. FESA Community Safety awareness promotions City of Melville promote fire safety message	FESA City of Melville
Suggested prevention & preparedness strategies	Agency
Campaign to reduce the number of solid fuel heaters in homes.	City of Melville

Treatment Schedule

Risk No. 10/10			
RISK STATEMENT: There is a risk that structure fires that occur in private dwellings and buildings within the City of Melville will cause serious injury to people .		DATE: 19/07/2010	
Likelihood	Consequence	Level of Risk	Risk Priority
Almost certain	Minor	Medium	3
Vulnerability Data: Structure fires occur occasionally within the City of Melville with varying degrees of damage incurred. The fires can involve either commercial or residential structures at anytime. Structure fires can begin from a source within the structure (e.g. candle in a house, chemical reaction in a factory, etc) or from an external source (e.g. Bush Fire, other structure fire, etc). They are generally isolated incidents though they may impact on neighbouring structures. Structure fires can become very intense extremely quickly, dependant on fuel type and. Structure fire can occur at any time of day or night and can be controlled very quickly or dependent on fuel source may burn over a number of days.			
Agency/Group/Persons with emergency risk management responsibilities: FESA and the City of Melville promote community awareness (e.g. candle education, installation of smoke alarms, etc) and hazard reduction (e.g. internally: keep heating appliances away from flammable goods; externally: reduce fuel loads around structures) within and around structures. Synergy has a Safety Watch-it Van that is used within the community as a service that offers free safety checks on a variety of electrical appliances. The Building Code of Australia enables the achievement and maintenance of acceptable standards of structural sufficiency, smoke alarm requirements, safety (including safety from fire), health and amenity throughout Australia.			
Existing prevention & preparedness strategies		Agency	
FESA Prevention & preparedness policy. FESA Community Safety awareness promotions		FESA	
Suggested prevention & preparedness strategies		Agency	
Campaign to reduce the number of solid fuel heaters in homes.		City of Melville	
Treatment Schedule			

Risk No. 11/10			
RISK STATEMENT: There is a risk that structure fires that occur in private dwellings and buildings within the City of Melville will affect the economy of the community.		DATE: 19/07/2010	
Likelihood	Consequence	Level of Risk	Risk Priority
Possible	Moderate	Medium	Acceptable Risk
Vulnerability Data: Structure fires occur occasionally within the City of Melville with varying degrees of damage incurred. The fires can involve either commercial or residential structures at anytime. Structure fires can begin from a source within the structure (e.g. candle in a house, chemical reaction in a factory, etc) or from an external source (e.g. Bush Fire, other structure fire, etc). They are generally isolated incidents though they may impact on neighbouring structures. Structure fires can become very intense extremely quickly, dependant on fuel type and. Structure fire can occur at any time of day or night and can be controlled very quickly or dependent on fuel source may burn over a number of days.			
Agency/Group/Persons with emergency risk management responsibilities: FESA and the City of Melville promote community awareness (e.g. candle education, installation of smoke alarms, etc) and hazard reduction (e.g. internally: keep heating appliances away from flammable goods; externally: reduce fuel loads around structures) within and around structures. Synergy has a Safety Watch-it Van that is used within the community as a service that offers free safety checks on a variety of electrical appliances. The Building Code of Australia enables the achievement and maintenance of acceptable standards of structural sufficiency, smoke alarm requirements, safety (including safety from fire), health and amenity throughout Australia.			
Existing prevention & preparedness strategies		Agency	
FESA Prevention & Preparedness policy FESA Community Safety awareness promotions		FESA	
Suggested prevention & preparedness strategies		Agency	
Treatment Schedule			

Risk No. 12/10

RISK STATEMENT:
 There is a risk that a road transport emergency involving the interaction between heavy vehicles and other road traffic on major transport routes within the City of Melville will **cause death**. Heavy transport vehicles ply major roads within the City of Melville alongside private vehicles and passenger transport vehicles.

DATE: 19/07/2010

Likelihood	Consequence	Level of Risk	Risk Priority
Almost certain	Minor	Medium	Acceptable Risk

Vulnerability Data:
 Road transport emergencies involving interaction between heavy vehicles and other traffic can occur and any hour of the day or night but predominantly during day light hours when heavy vehicles are prevalent on major roads within the City of Melville. The City of Melville has four major heavy vehicle routes within its boundaries; Leach Highway, Canning Highway, Roe Highway, Stock Road and the Kwinana Freeway. Heavy vehicle accidents can cause death and serious injury especially when they involve smaller vehicles and passenger vehicles such as buses. Heavy fuel tankers ply the major routes through the city carrying toxic chemicals and fuels along with livestock carriers. In a roll over situation, these loads can present dangerous situations for the public and responders.

Agency/Group/Persons with emergency risk management responsibilities:
 Heavy vehicles are restricted to certain route through the City of Melville. Leach Highway is a designated heavy vehicle route between the port of Fremantle and the industrial areas of O'Connor, Canning vale and Welshpool. The carriage of dangerous goods is controlled by the DoCEP Resources Safety Division. WA Police through the Road safety Council and local programs such as Road Wise promote road safety messages and strategies.

Existing prevention & preparedness strategies	Agency
Suggested prevention & preparedness strategies	Agency
Improve road maintenance programs	City of Melville/Main Roads WA

Treatment Schedule

Risk No. 13/10

RISK STATEMENT:
 There is a risk that a hazardous materials spill will cause damage to or destroy **infrastructure**. City drainage systems including storm water sumps and drainage outfalls may become contaminated and require reconditioning.

DATE: 19/07/2010

Likelihood	Consequence	Level of Risk	Risk Priority
Unlikely	Moderate	Medium	7

Vulnerability Data:
 Hazardous materials are transported through the City of Melville at all times of the day and night through heavily populated suburban areas. Although strict controls are placed on the transporting and storage of these goods, there is always the likelihood that a spill of some kind will occur. Hazardous materials in the form of bulk toxic industrial chemicals, fuels and oils are transported on the major roads within the City of Melville between the port of Fremantle and heavy industrial areas of O'Connor, Welshpool and Canningvale. Industrial chemicals are also stored in diverse factories and business premises within the industrial parks. These chemicals are largely unknown unless they are of reportable quantities. Hazardous materials spills can impact on the environment and cause harm to public health through toxic plumes carried by the prevailing winds.

Agency/Group/Persons with emergency risk management responsibilities:
 The carriage of dangerous goods is controlled by the DoCEP Resources Safety Division. Storage of dangerous goods is controlled under the Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007 for prescribed levels of dangerous goods. The Dangerous Goods Safety (Major Hazard Facilities) Regulations 2007 applies to those sites where the type and quantity of dangerous goods have the potential to cause serious damage. Westplan HAZMAT provides the State response to hazardous materials spills. FESA is the HMA for hazardous materials spills.

Existing prevention & preparedness strategies	Agency
Drainage system maintenance and upgrades Maintain local drain maps	City of Melville
Suggested prevention & preparedness strategies	Agency
Provide Meta Data of the City drainage systems to Landgate and FESA for uploading to the Slip-EM program.	City of Melville/FESA

Treatment Schedule
As soon as is reasonably practicable