

# Environmental Health Disaster Management

**31<sup>st</sup> July – 5<sup>th</sup> August 2016**

Venue: Rydges Southbank

Townsville, Queensland

*"Endorsed by IFEH"*



**Delivered and facilitated by:**



*Griffith University - EHADI Accredited Trainers  
Supported by NEHA/Center for Disease Control and Prevention (CDC) - Atlanta, USA and  
UNISDR - Incheon, Korea.*

## Environmental Health Disaster Management

### Course developed by:



**Tim Hatch** MPA, REHS  
Planning and Logistics Director  
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**Dr Peter Davey** PhD, FAIEH, EIANZ  
Hon. Vice President IFEH  
Senior Lecturer Environmental Management  
School of Environment, Griffith University

**Melissa McKeown**  
Manager Environmental Health &  
Shelters & Evacuation Centres Coordinator  
Townsville City Council



**Gavin Hammond**  
Executive Manager Environmental Health,  
Deputy Townsville Local Disaster Management Group Coordinator  
Townsville City Council



**Presenters:**

**Tim Hatch, MPA, REHS**

Planning and Logistics Director  
Alabama Department of Public Health  
Center for Emergency Preparedness



Tim is highly qualified and experienced professional in Environmental Health and Disaster Management in America. Tim is the subject matter expert for their Environmental Health Training for Emergency Response course and the Healthcare Leadership course. Tim's disaster responses include: Hurricane Ivan (2004), Hurricane Katrina (2005), Kentucky Ice Storm (2009), widespread water outage in rural Alabama (2009), Gulf Oil Spill (2010), and Alabama Tornadoes (2011). Tim has made it his personal goal to learn all that he can about the environmental impacts on human health. Tim has spent the last few years responding to disasters across the south of America and he has learnt a lot about how environmental health fits into disaster preparedness and response. Tim is a Sessional Lecturer at Griffith University, NEHA Global Program Manager and an Accredited USA - CDC Trainer.



**Dr Peter Davey**

Hon Vice President IFEH, Senior Lecturer  
Env Health and Disaster Management Short  
Course Training  
Griffiths School of Environment, Griffith University Brisbane

Peter is an accredited EHO, a Fellow of EHA and Hon. Vice President IFEH; and Senior Lecturer at Griffith University teaching and researching in the environmental health and disaster management in Brisbane -Queensland, and across the Asia and Pacific Region. Peter has a focus on partnerships for capacity building and institutional strengthening with Indonesian agencies and working towards sustainable development goals. Peter is a UNISDR GETI Global Disaster Risk Reduction Trainer.

**Gavin Hammond** Executive Manager Environmental Health, Townsville City Council  
Deputy Townsville Local Disaster Management Group Coordinator

Gavin is the Executive Director of environmental health with the Townsville City Council. His role overseeing all environmental health issues in the competence of "boards of the city of Townsville. He has worked in all aspects of the "environmental health" since graduating from the Queensland Institute of technology "in 1983. Most of these have been implemented in North Queensland. He praised his qualifications for environmental health graduate diploma and master's degree in management. Since 2009 Gavin has taken on the additional role of Deputy Coordinator of local disasters with local disaster management group working in the area of Townsville and helped in every event since then.

**Ian Kuhl**

Waste Advisor  
Kuhl-Meadows

Ian retired as Manager of Waste Operations with Townsville City Council in 2011 three days before Cyclone Yasi. Four days after Yasi Ian commenced consulting on environmental health, waste management and public health to the Cassowary Coast Regional Council to assist in the recovery from Cyclone Yasi. This has involved the construction of two landfill cells to replace air space used for cyclone waste, managing the 100,000 cubic metres of temporarily stored waste awaiting the completion of the landfill cells, the review of the CCRC Waste Management Strategy and the preparation of the waste contracts. Ian has previously been involved in disaster management (including Cyclone Althea 1971) during his 20 year military career and when at Townsville City Council (Townsville floods and minor cyclones also assisting Johnstone Shire Council for Cyclone Larry 2007). Ian has been involved in CCRC addressing the need for the community to be resilient in the cyclone recovery and the management of asbestos containing material after a cyclone.

**Bob Handby**

Former Manager Water & Sanitation for International Emergencies  
Retired from Australian Red Cross

Bob Handby recently retired from the position as manager of Water & Sanitation for International Emergencies with the Australian Red Cross. Prior to this he had a 27 year career in local government as an Environmental Health Officer. Since 1984 Bob has undertaken numerous missions with the Red Cross to some of the world's greatest disasters, including conflict zones in Uganda, Iraq, Rwanda, Kosovo and Sri Lanka. Bob has worked extensively throughout Asia and the Pacific in natural disasters, including the Boxing Day Tsunami in Banda Aceh, Cyclone Nargis in Myanmar and floods in Pakistan. Although retired, Bob maintains an active role with the Institute in Emergency Management and has worked in disasters in Australia, including floods, bushfires and cyclones. Bob is a Life Fellow of Environmental Health Australia.

### **Why you should attend:**

EHA together with Griffith University and TCC are extending an invitation to all Environmental Health and Disaster Management Professionals to attend our Environmental Health in Disaster Management Course (EHDM). This course is based on the Center for Disease Control and Prevention's (CDC) successful Environmental Health Training in Emergency Response (EHTER) Awareness Level course run throughout America, Europe by Griffith University in the Asia Pacific Region. This course is seen as international best practice for environmental health in disaster management. If you want your employees to be capable and competent in planning for disaster risks and responding in a disaster situation than this is the only course they need to be attending.

Attendance at this course will provide:

- Pathways to develop relationships and networks with members from EHA, IFEH, CDC US, Local & State Governments, Universities and International professionals;
- Increase the knowledge and skills in disaster management;
- Further development of your Environmental Health Plan for disaster situations;
- To learn practical solutions to address a number of environmental health issues that occurs in a disaster; and
- Access to emerging thinking and hands on applications in all manners of environmental health tasks.

### **Introduction**

During the last quarter century, more than 3.4 million lives have been lost due to disasters, with billions more affected, and tens of billions of dollars spent on repairing damage and reconstructing lives<sup>i</sup>. Between 1980 and 2005, 90 per cent of the natural disasters, 72.5 per cent of casualties and 75 per cent of economic losses were caused by weather, climate and water related hazards such as droughts, floods, windstorms, tropical cyclones, storm surges, extreme temperatures, landslides and wild fires, or by health epidemics and insect infestations<sup>ii</sup>.

Environmental health disaster management has a significant role in addressing the impact of disasters on environmental health infrastructure and consequently the public. This includes protecting and mitigating risks to systems

required for general health and wellbeing, such as water supply, food safety, sewerage, waste management and stormwater<sup>iii</sup>.

The risk planning, preparedness and response actions to the environmental health aspects of disasters are vital in influencing the amount of human suffering, loss of life and ill-health. For example, over two years after the 2004 Indian Ocean tsunami caused massive devastation, people were living in temporary shelters and reconstruction projects were struggling to ensure that new housing had clean water supplies and good sanitation. At this time, diarrhoea was prevalent and there were a large number of vector-borne disease cases (dengue and malaria) in Indonesia's capital Aceh.<sup>iv</sup>

As the world's population and density continues to increase, the risk disasters pose to environmental infrastructure and conditions will continue to rise. Furthermore, increased urbanisation and industrialisation place a greater proportion of the world cities and community at risk to be resilient with the majority of the population migrating to urban, disaster-prone areas that are often without an adequate level of environmental health protective infrastructure<sup>v</sup>. Resilient Cities need proper landuse planning and infrastructure that will survive a natural hazard.

### **About the Course**

Environmental health and disaster management professionals from across the world have a critical function in mitigating public health risks during a response to a disaster. To ensure environmental health and disaster management professionals are adequately equipped to prepare for, respond to, recover from, and mitigate the adverse impacts of disasters, the International Federation of Environmental Health (IFEH) endorses this training, Environmental Health Australia (Qld) Inc., the USA Centers for Disease Control and Prevention (CDC) and the National Environmental Health Association (USA) and Griffith University have worked together to develop this Australian course.

This course will identify the critical role you, as an environmental health professional may have in planning and mitigating environmental health risks before and after a disaster. This includes the need to conduct risk mapping and assessments to identify and address key risks



such as those relating to drinking water, shelters, communicable diseases, food safety, wastewater, disease-causing vectors, solid waste and hazardous materials. Many of these risks are within the existing roles of environmental health professionals, however, a disaster response has unique challenges and a specific skill set is required from a range of professions and all levels of government.


The course recognises that environmental health professionals are in the best position to assess and address the impact of disasters due to their skill set and population-based focus. The content is guided by the successful Environmental Health Training in Emergency Response (EHTER) course run by CDC and has use of UNISDR DRR training materials. It will provide training on how to apply environmental health skills and information in a disaster setting.

- i. Hogan D, Burstein J (2007). Basic Perspectives on Disaster. Lippincott Williams and Wilkins, Philadelphia.
- ii. World Meteorological Organization. WMO Disaster Risk Reduction Programme. Accessed 23 February 2012; Available from: <http://www.wmo.int/pages/prog/drr/>
- iii. Commonwealth of Australia (2008). Report of the 6th National Conference - Sustaining Environmental Health in Indigenous Communities.
- iv. Chang, M. (2007). Health and housing after the Indian Ocean tsunami. *Lancet*, 369(9579):2066–2068.
- v. World Health Organization. Statistical Information System Page. Accessed 30 May 2011. Available at <http://www.who.int/whosis>

### Learning Objectives

- Demonstrate how environmental health infrastructure and practices are central to disaster management activities
- Provide an overview of key environmental health infrastructure and how this can be affected by natural disasters
- Understand what should be considered to mitigate the environmental health risks
- Provide guidance on planning, assessing, addressing and responding to environmental health impacts of a disaster using a population focus

### Course Structure



The course addresses the need for environmental health and other professionals to

increase their education and training in disaster management. This course covers twelve core topics (see course content) and includes an exercise to demonstrate the relevance of these topics in the disaster setting. A provisional program is at [Attachment A](#).

### Course Content

The course core topics are outlined:

1. Disaster Management
  - Discuss DRR planning, systems, guidelines and programs/tools that guide the role of environmental health before and during the disaster management cycle
  - Identify and discuss disaster preparedness, response, recovery, and mitigation resources for environmental health
  - Outline the structures and parameters in which environmental health may function during a disaster
  - Discuss environmental health disaster preparedness, risk mapping and response systems
2. Drinking Water
  - Water issues faced in disasters
  - The role of environmental health practitioners in addressing water issues
  - Identification of key response partners
  - Increase understanding of the basic components of drinking water systems
  - Practice and demonstrate basic skills related to water issues
  - Common tests, sampling, treatment and assessment
  - Identify key messages for the public and response partners
3. Food Safety
  - Discuss food safety preparedness and response considerations
  - Operational considerations for mass feeding
  - Methods that may be used for assessing and mitigating food safety risks
  - Considerations for reopening food establishments
  - Actions that environmental health professionals can take to promote food protection

#### 4. Wastewater

- Environmental health role in wastewater issues
- Describe onsite (septic) and public sewer wastewater systems
- Discuss system vulnerabilities, failures and recovery considerations
- Identify alternative means of treating wastewater
- Assessment and response to wastewater spills
- Identify areas to improve wastewater preparedness

#### 5. Solid Waste and Hazardous Materials

- Discuss solid and hazardous waste issues
- Identify key response partners
- Increase understanding of solid and hazardous waste planning, collection and disposal

#### 6. Vector Control

- The impact of vectors disaster events
- Control measures needed in disaster events
- The role of environmental health in addressing vector control issues
- Identification of key response partners

#### 7. Shelters (including Red Cross involvement)

- Shelter types and their operations
- The role of environmental health within shelters
- Planning and operational considerations for shelters
- Considerations and processes for conducting an environmental health shelter assessment
- Identify key environmental health preparedness, response and recovery actions for shelters and interim housing

#### 8. Building Health Assessments

- Discuss how disasters can impact buildings
- Identify exterior and interior building components
- Explain assessment preparation and process for buildings
- Identify building-related health hazards
- Exercise recovery and re-occupancy evaluations
- Identify preventative actions to improve building resiliency

#### 9. Responder Safety

- Identify common hazards that may be encountered during a response
- How disaster related hazards can affect your health
- Health and safety precautions that should be taken during a response

#### 10. Animals in Disasters

- Discuss animals in shelters and evacuation centres
- Discuss the benefits of animals in disaster recovery
- Discuss the stressors on people where animals are concerned

#### 11. Media Management

- Identify the types of communication tools
- Discuss the advantages and disadvantages of social media
- How media can work and go terribly wrong

#### 12. CCA and Communicable Diseases in Disasters

- Identify diseases that can occur in disaster situations
- Look at practical ways to prevent the spread of diseases

#### **Target Audience**

Environmental health specialists, professionals and students who plan to broaden their understanding of the role environmental health has during the preparedness and response phases of disaster management. Participants can be from the local, provisional, state, federal, international and private sectors.

The course is also relevant for other health and disaster professionals who require further knowledge of the role environmental health has in disaster preparedness and response.

#### **Course Cost**

EHA member \$1650 (inc GST)  
 Student EHA member \$1155  
 Non-members: \$1980 (inc GST)  
 Student non-members \$1485





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# ENVIRONMENTAL HEALTH DISASTER MANAGEMENT COURSE

## PROGRAM

**31<sup>st</sup> July – 5<sup>TH</sup> AUGUST 2016**

**Day 1 – Sunday 31st July – Savoy Room Convention Centre**

*Facilitated by Melissa McKeown*

**4:00pm Welcoming participants on arrival**

**Course Overview – Melissa McKeown**

**4.20pm Official Welcome – Mayor of Townsville – Jenny Hill**

**4.30pm TCC, CDC-USA, IFEH, Griffith University, and EHA forming partnerships – Grant Steen , Tim Hatch and Peter Davey**

**4.45pm EHA Update – Grant Steen**

**5.00pm IFEH and UNISDR/WHO Update and Disaster Risk Reduction Framework 2015 -2030 – Dr Peter Davey**

**5.30pm Introduction to Disasters – Bob Handby**

**6.30pm Disasters and EHDM Training –Tim Hatch**

**7.30pm Dinner – BBQ Feast at Southbank Grill (basic beer & wine included, cash bar for spirits)**



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## **Day 2 – Monday 1 August – Kingston Room Convention Centre**

***From 6.30am Full Buffet Breakfast Southbank Grill Restaurant***

***Facilitated by Melissa McKeown***

**8.30am Pre course knowledge test – Tim Hatch**

**9.00am Qld Disaster Management Arrangements – Gavin Hammond**

**10.30am Morning Tea in the Convention Centre**

**11.00am Responder Safety – Melissa McKeon**

***12.00noon Lunch in the Foyer***

**1.00pm Wastewater – Tim Hatch**

**2.00pm Wastewater – continued  
Rural Water & Wastewater Exercise – Tim Hatch**

**3.00pm Afternoon Tea in the Foyer**

**3.30pm Climate Change Adaptation and Disaster Risk Reduction with  
International Case Studies – Dr Peter Davey**

**5.00pm Review of Day – Tim Hatch**

***Dinner Presentation***

***Facilitated by Angela Lawson***

**6.00pm Dinner - Roast Carvery at Savoy Balcony (cash bar available)**

**7.15pm Ebola Response – Bob Handby**



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## **Day 3 – Tuesday 2 August – Kingston Room Convention Centre**

***From 6.30am Full Buffet Breakfast Southbank Grill Restaurant***

***Facilitated by Angela Lawson***

**8.30am Emergency water supplies – Bob Handby**

**10.00am Floods – Bob Handby**

**10.30am Morning Tea in the Foyer**

**11.00am Drinking Water – Tim Hatch and Peter Davey**

***12.00noon Lunch In the Foyer***

***Facilitated by Melissa McKeown***

**1.00pm Solid Hazardous Waste Materials & Exercise – Ian Kuhl**

**3.00pm Afternoon Tea in the Foyer**

**3:30pm Solid Waste & Debris – Tim Hatch**

**4.30pm Communicable and Chronic Diseases – Peter Davey**

**5.30pm Review of Day – Tim Hatch**

**6.30pm Formal Course Dinner at Michel's Restaurant Palmer Street**

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## **Day 4 – Wednesday 3 August – Kingston Room Convention Centre**

***From 6.30am Full Buffet Breakfast Southbank Grill Restaurant***

***Facilitated by Melissa McKeown***

**8.30am Depart for Heatley Public Cyclone Shelter**

**9.00am Site Tour Heatley Public Cyclone Shelter – Wayne Preedy & Melissa McKeown**

**10.00am Return back to Convention Centre**

**10.30am Morning Tea in the Foyer**

**10.45am Red Cross & Evacuation Centres – Daryl Hanger  
Shelters & Evacuation Centres Townsville City Council perspective –  
Melissa McKeown**

***12.30pm Lunch in the Foyer***

***Facilitated by Angela Lawson***

**1.30pm Mass Gatherings and temporary accommodation – Bob Handby**

**3.00pm Afternoon Tea in the Foyer**

**3.30pm Food Safety – Tim Hatch and Peter Davey**

**5.30pm Review of the day – Tim Hatch**

**6.00pm Dinner - Banquet at Savoy Balcony and Presentation**

**7.00pm Gulf Oil Spill – Tim Hatch**

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## **Day 5 – Thursday 4 August – Kingston Room Convention Centre**

***From 6.30am Full Buffet Breakfast at Southbank Grill Restaurant***

***Facilitated by Melissa McKeown***

**8.30am Media & Communications – Townsville City Council perspective  
Chris Morris**

**9.30am Animals in disasters – A Townsville City Council plan – Mykel Smith**

**10.30am Morning Tea in the Foyer**

**10.45am Vector & pest control – Tim Hatch**

***12.00noon Lunch in the Foyer***

***Facilitated by Angela Lawson***

**1:00pm Vector Control Townsville City Council perspective – Darren  
Alsemgeest**

**2.00pm Mapping Risks in Communities and Building Health Assessments –  
Peter Davey**

**3.00pm Afternoon Tea in the Foyer**

**3.30pm Disaster Exercise – Angela Lawson**

**5.30pm Review of the Course to-date – Tim Hatch**

**6.30pm Dinner – Cactus Jacks – Palmer Street**

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## **Day 6 – Friday 5 August – Kingston Room Convention Centre**

***From 6.30am Full Buffet Breakfast at Southbank Grill Restaurant***

***Facilitated by Melissa McKeown***

**8.30am Disaster Exercise Continued - Angela Lawson**

***10.30am Morning Tea in the Foyer***

**10.45am Disaster Exercise Summary – Angela Lawson**

**11.00am Post Course Knowledge Test – Melissa McKeown**

**11.30pm Week in Review - Peter Davey**

**11.45am Presentations & Close – Grant Steen, Peter Davey**

***12.00noon Lunch in the Foyer***

**Close 1.00pm**