



Healthy Urban Atmospheres

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introduction

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# Healthy Urban Atmospheres

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## Introduction to the programme

What?

Why?

How?





# Healthy Urban Atmospheres

## Introduction to the programme

### Healthy Urban Atmospheres: Towards Sustainable Air Quality Management

Funded by FRST contract number C01X0813



Eight years from 1<sup>st</sup> October 2008





# Healthy Urban Atmospheres

## Introduction to the programme

### Healthy Urban Atmospheres: Towards Sustainable Air Quality Management

NIWA,  
The University of Canterbury,  
Landcare Research,  
Environet Ltd.  
Golder Associates





# Healthy Urban Atmospheres

## Introduction to the programme

### Healthy Urban Atmospheres: Towards Sustainable Air Quality Management

#### **Managing air quality in a sustainable development framework**

“The overall approach is for air quality management to sit within a sustainable framework, with good air quality recognised as an indicator of sustainable development.”





# Healthy Urban Atmospheres

## Introduction to the programme

Programme is subdivided into three interdependent Objectives.

### 1 National Environmental Standards – toward 2013 and beyond

Providing science to assist with the implementation of the NES and looking forward to the next generation air quality management

### 2 Understanding Exposure

Quantifying; measuring, modelling and mapping  
Total exposure – indoors, outdoors, commuting...  
Managing exposure

### 3 Towards Sustainable Air Quality management

Integration – AQ, energy, transport etc  
AQ as an indicator of sustainability





# Healthy Urban Atmospheres

## Introduction to the programme

### Why?

#### Aims

To get ahead of the game

Provide the research that NZ will be using in 10 to 15 years time

Put NZ AQ research up with international front runners

Provide research input to development of international standards (e.g. WHO guidelines, EU exposure standards)

the programme should be “aiming to meet future needs of users rather than their current day-to-day, potentially short-term, requirements” Peter Brimblecome UEA, review of previous FRST research programme, 2001.





# Healthy Urban Atmospheres

## Introduction to the programme

### Why?

Benefits to New Zealand

### Managing New Zealand's air quality in a sustainable development framework

- Joining up the dots – linking air quality to
  - health outcomes
  - energy policy
  - social and economic policy
- The next generation of air quality legislation
  - international
  - local
- The next generation of air quality researchers and managers







# Healthy Urban Atmospheres

## Introduction to the programme

How?

Objective 1: NES – beyond 2013

Characterisation of urban air quality

What's out there?

High resolution spatial and temporal measurements

Physico-chemical characteristics

Understanding processes

What causes emissions in one place to lead to concentrations measured somewhere else?

Better emissions estimates

Small scale met

Topography

Assessment tools

Turning understanding into models





# Healthy Urban Atmospheres

## Introduction to the programme

How?

### Objective 2: Exposure & Effects

Characterise exposure distribution & determinants

How and why does my individual exposure differ from yours?

High resolution pollution mapping

Exposure gradients

Behaviour & lifestyle

Total exposure

Indoors (home, work)

Outdoors

Commuting

### Assessment tools & Assessments

Classify exposures

Links to epidemiology

Health outcomes





# Healthy Urban Atmospheres

## Introduction to the programme

How?

Objective 3: AQ & Sustainability

Explore (policy and physical) drivers, impacts and linkages

Current AQ policy – impacts on other policies?

Energy and transport policy – impacts on AQ?

Outcomes, indicators, information, decision-support

Decision tool(s) for planners (how not to make AQ worse)

AQ impacts of non-AQ decisions





# Healthy Urban Atmospheres

## Introduction to the programme

How?

This will enable others to;

Objective 1: NES

Meet AQNES

Review existing and set new standards and related policies

Objective 2: Exposure & Effects

Improve understanding of links to health effects (through new epidemiology)

Improve & extend Health Risk Assessment

Demonstrate more efficient, effective and accountable air quality management

Objective 3: AQ & Sustainability

Better integrate management & planning

Fund and execute prioritised additional research

Consider new policy on the basis of improved NZ-based evidence

