



Mitigation and Adaptation Interactions: Heat-wave Responses in Vancouver

May 2011

CEDM Annual Meeting

Hadi Dowlatabadi, Tim McDaniels
and Amanda Procter

Introduction/Summary

Issue

- Mitigation and adaption interact.
 - Yet, they are often treated as independent activities.
- Mitigation of building emissions should not lead to elimination of A/C.

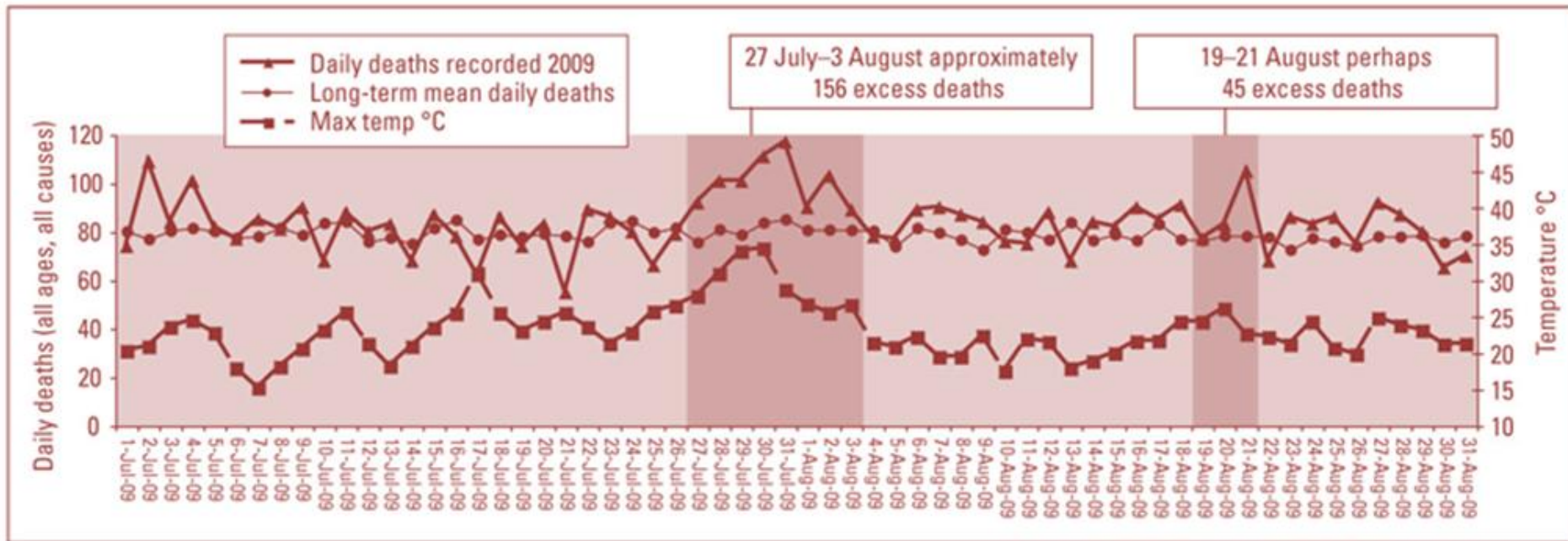
Decision-makers:

- ❖ 13 Municipal government planners (Metro Vancouver)
- ❖ Architects and developers
- ❖ Public health officials

Local Details

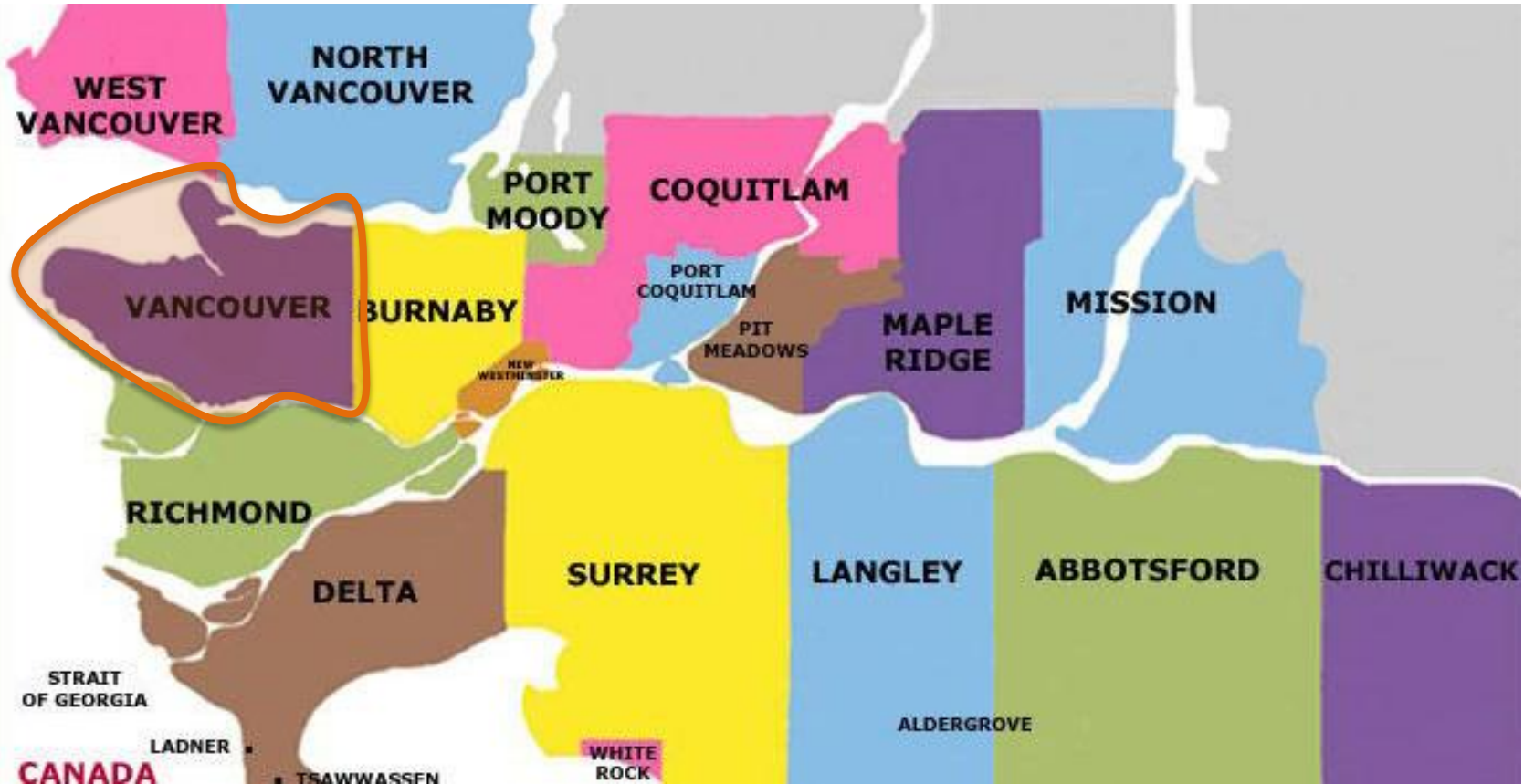
- Mild summers in Vancouver has led to few buildings with AC.
- Also, the population are among the most vulnerable in Canada to climate extremes.
- Yet officials were taken by surprise by ~200 deaths attributed to heat waves in 2009.

Excess Mortality During Heat Waves of 2009

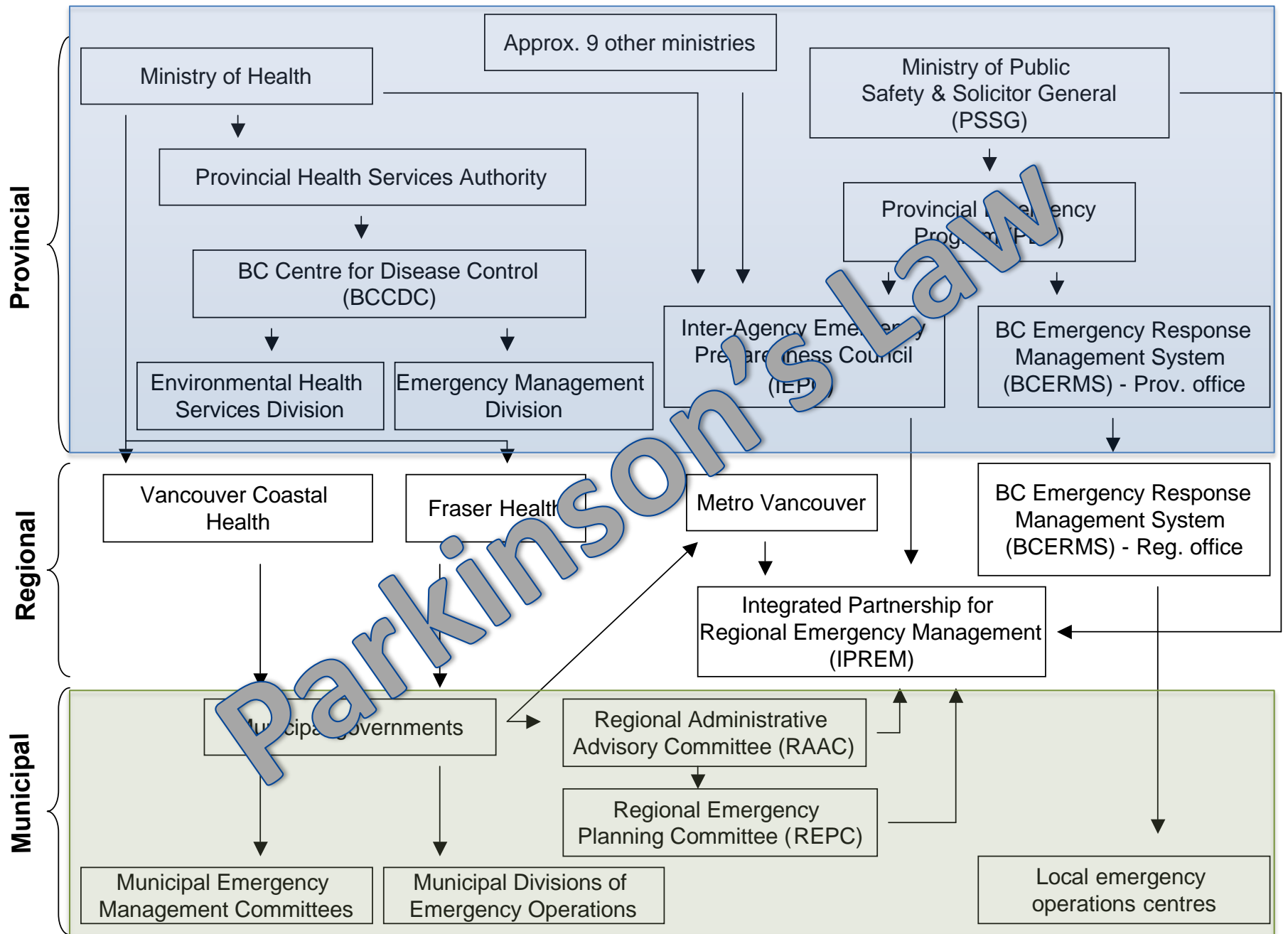


- There were ~200 excess deaths in the summer of 2009.
- The death of a homeless person prompted a Heat Wave response plan.
- If France had a similar rate of attrition 20,500 (not 15,000) would have perished in 2003.

Feedback and Institutional Response



- A well-publicized homeless death has led the City of Vancouver to “develop a heat-wave emergency plan.”
- No plans in the other 12 municipal governments



Institutional Framework for Emergency Planning and Response in British Columbia

Adaptation

BEING IMPLEMENTED

- Heat-wave alerts.
- More green spaces

PROVEN TO WORK

- Public alerts to curtail outdoor activity.
- Transport vulnerable populations to a cool refuge ($\leq 24^{\circ}\text{C}$) for 2-4 hours per day.

The Puzzle Pieces

- **Mitigation**
 - LEED Gold mistakenly adopted as a metric of good GHG mitigation.
 - LEED Gold Buildings developers given special privileges.
 - LEED Gold status is much easier to achieve without HVAC.
- **Built Environment**
 - Green Architects cannot meet internal temp target of 24C even now.
 - Green Architects are not using LCAs to refine high thermal mass designs.
 - Low GHG A/C technologies are available but not established with developers.
- **Adaptation**
 - Public Health Officer has not adopted the right threshold for heat alerts.
 - Public Health Officer has not identified the vulnerable pops or their shelter.
 - The adaptation officers have low institutional standing.

Summary

- We are working with the City, PHO, A/E and developers on the interactions between mitigation and adaptation.
- ... next steps involve finding winning combinations of mitigation and adaptation for Metro Vancouver.

