

Land Use, Transportation and  
Air Quality:  
Making Healthier Decisions

**The Role of Public Health**

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*BCCDC*

**Modification/modernization  
of Rue Notre Dame  
Montreal**



# Modification/modernization of Rue Notre Dame, Montreal

- In 2001 the Quebec Transport Ministry proposed to develop Notre Dame Boulevard into an urban highway joining Downtown to the east end of Montreal Island.
- The proposal involved creation of a partly covered 4-6 lane highway, with access lanes above, and public transit and cycling lanes beside, sound barriers around and parks nearby



**Montreal's Urban  
Highways**





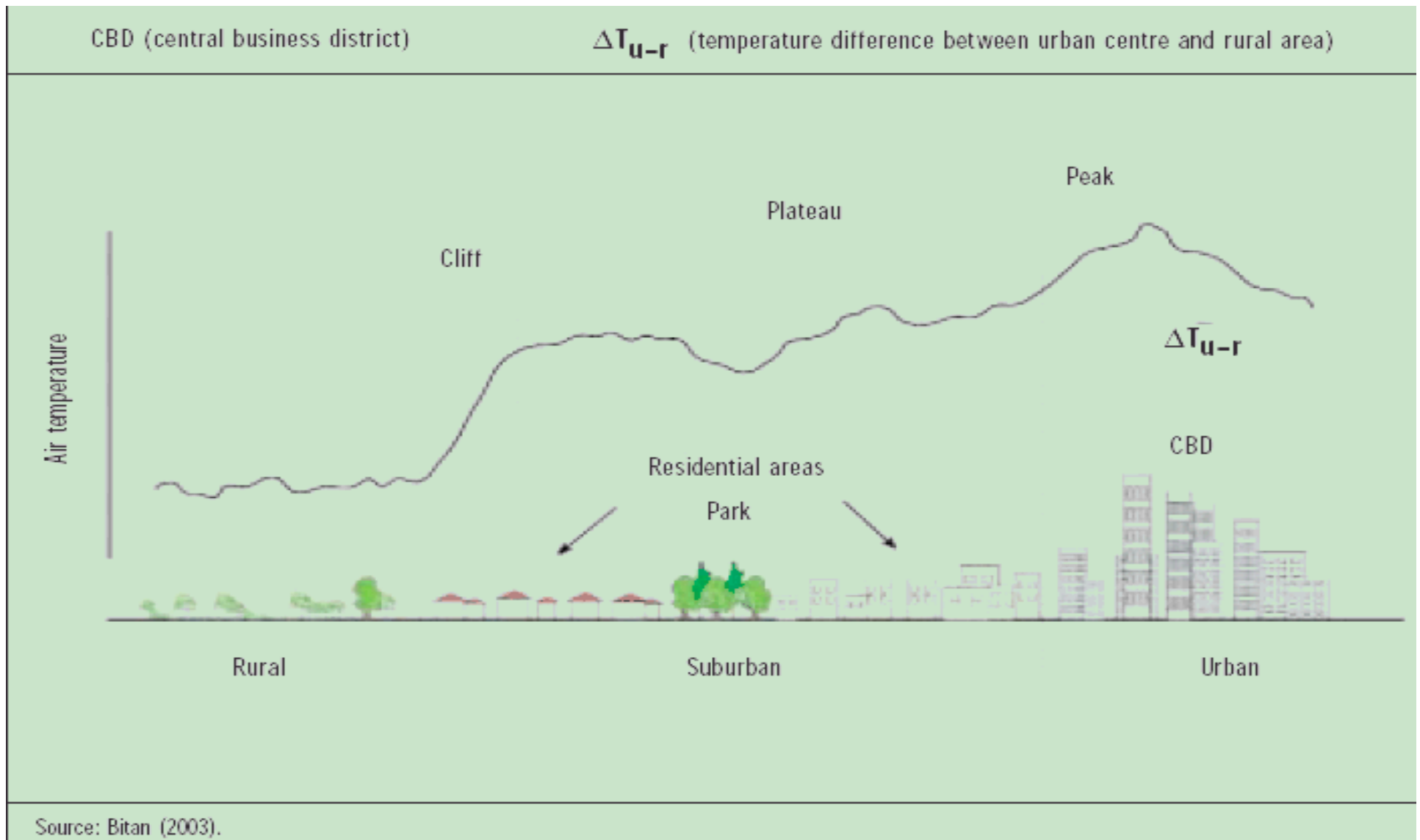
**In planning for an environmental impact hearing, Montreal Public Health analysts determined that:**

1. The submerged highway would lead to lower sound levels in residences nearby;
2. While regional PM levels might/might not rise, local PM would fall;
3. Cyclists/pedestrians would be more safe;
4. Local commerce would be stimulated

# The Regional Health Director **objected**

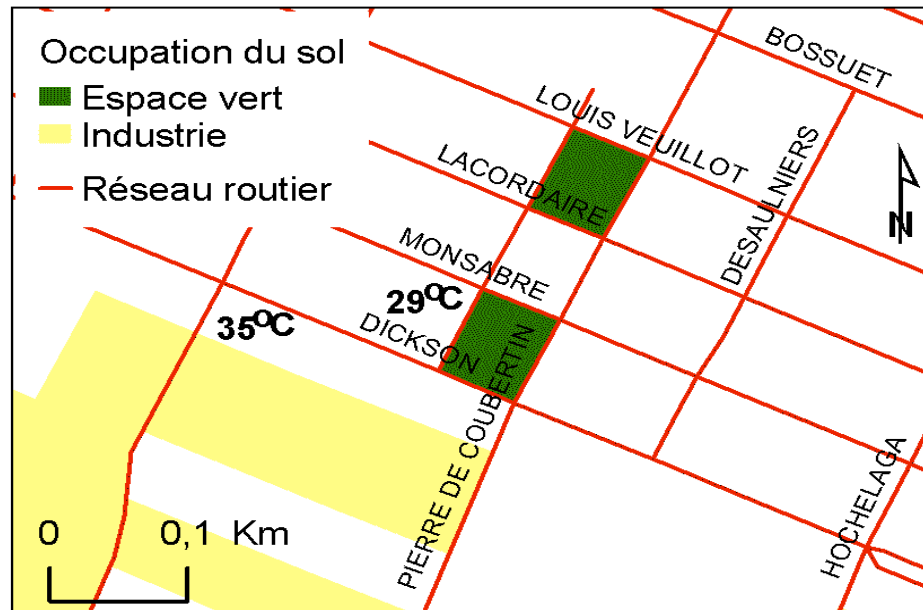
- The urban highway would increase traffic, encourage calls for a new bridge off Montreal Island and increase sprawl;
- **The health department argued for a comprehensive public transit alternative**

# Land Use, Transportation and Urban Heat

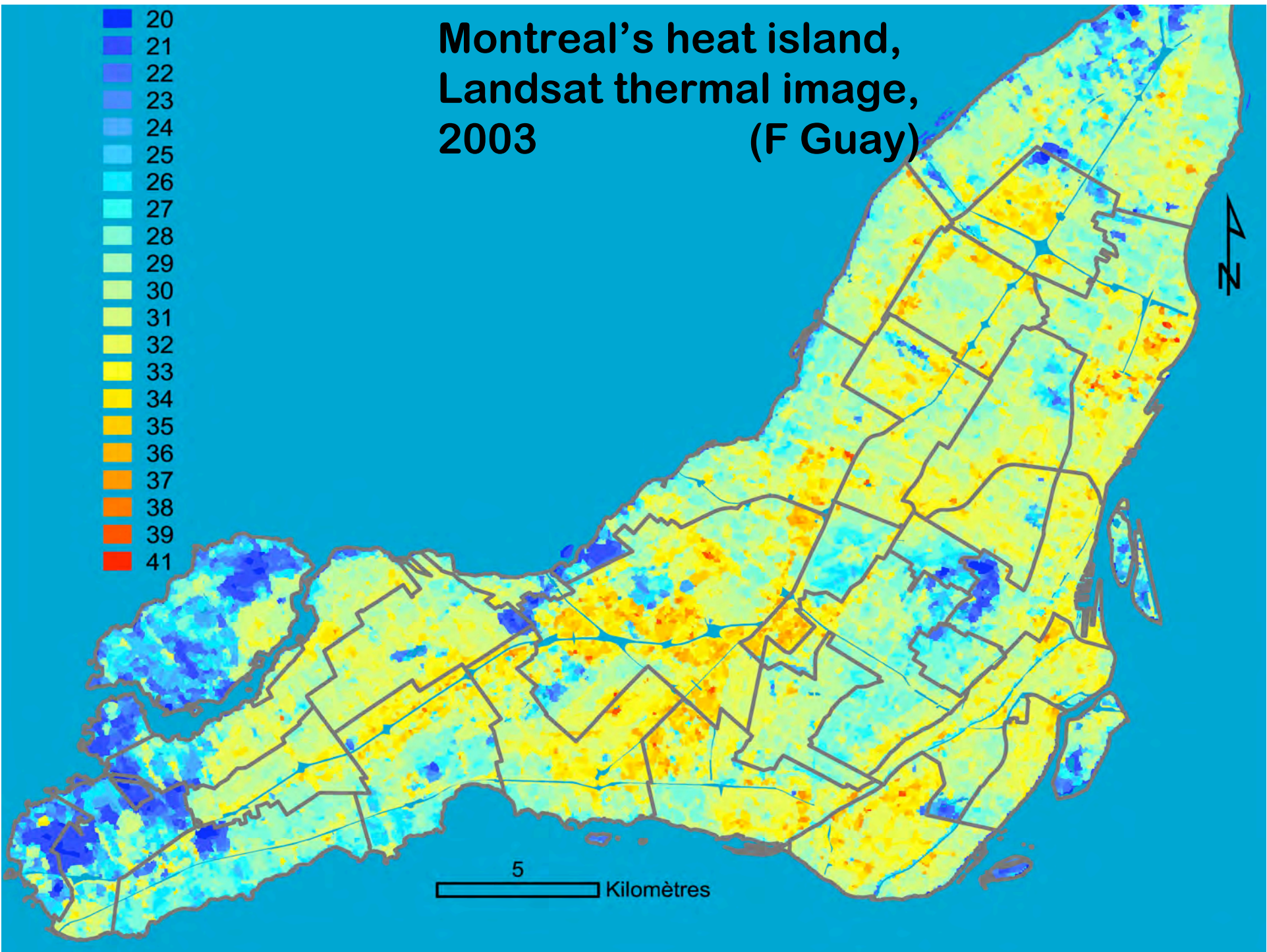


# Urban micro-climates in Montréal

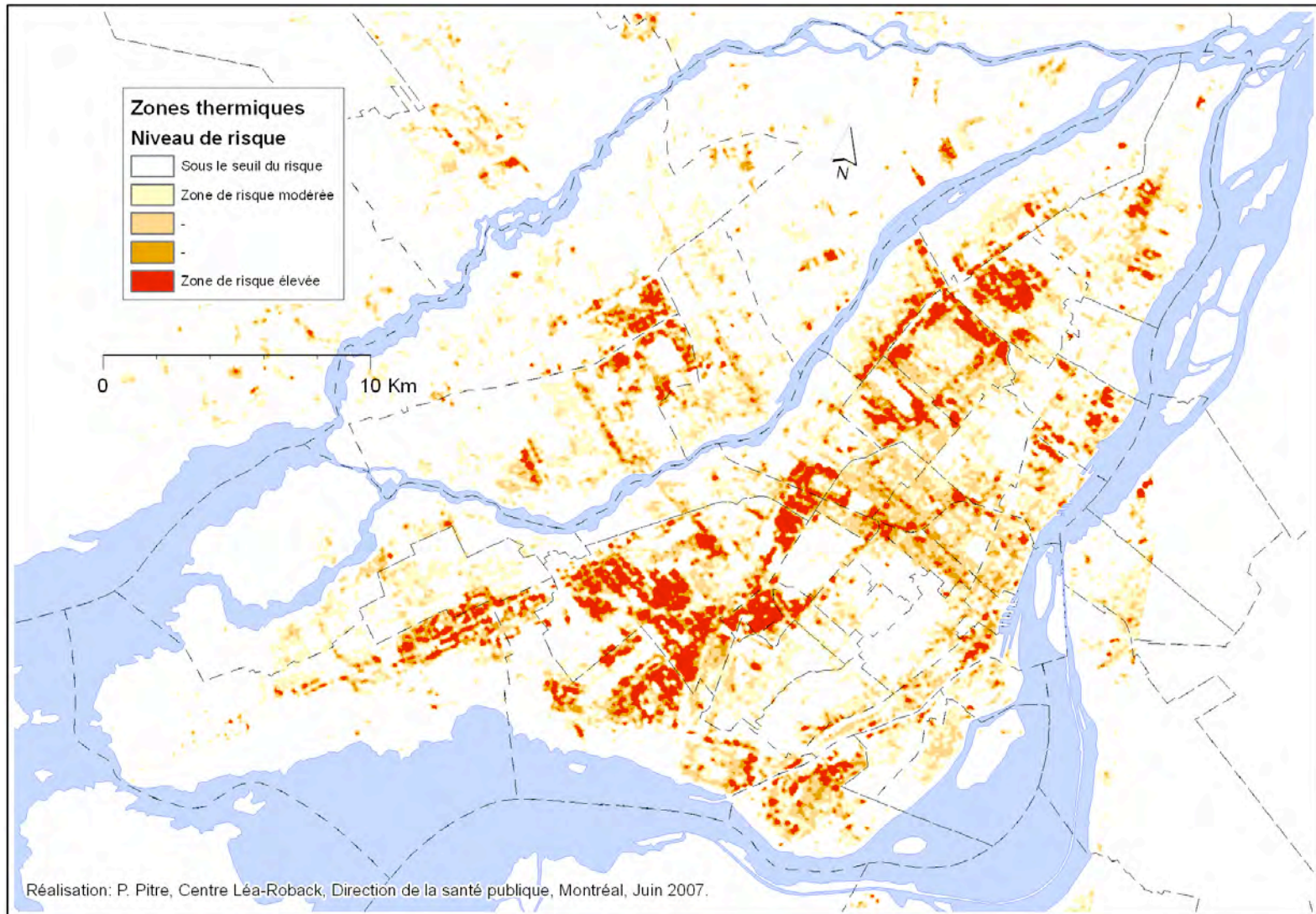
- Importance de considérer ce qui est à proximité de l'îlot de chaleur urbain. Le milieu environnement influence directement le comportement thermique des secteurs  
Exemple:  
2 secteurs de densité résidentielle moyenne, situés tous deux dans Mercier/Hochelaga-Maisonneuve, cumulent des températures très différentes (35°C et 29°C). Le secteur le plus chaud est à proximité d'une zone industrielle (Emballages Paperboard inc.) alors que le plus frais côtoie une zone de verdure.
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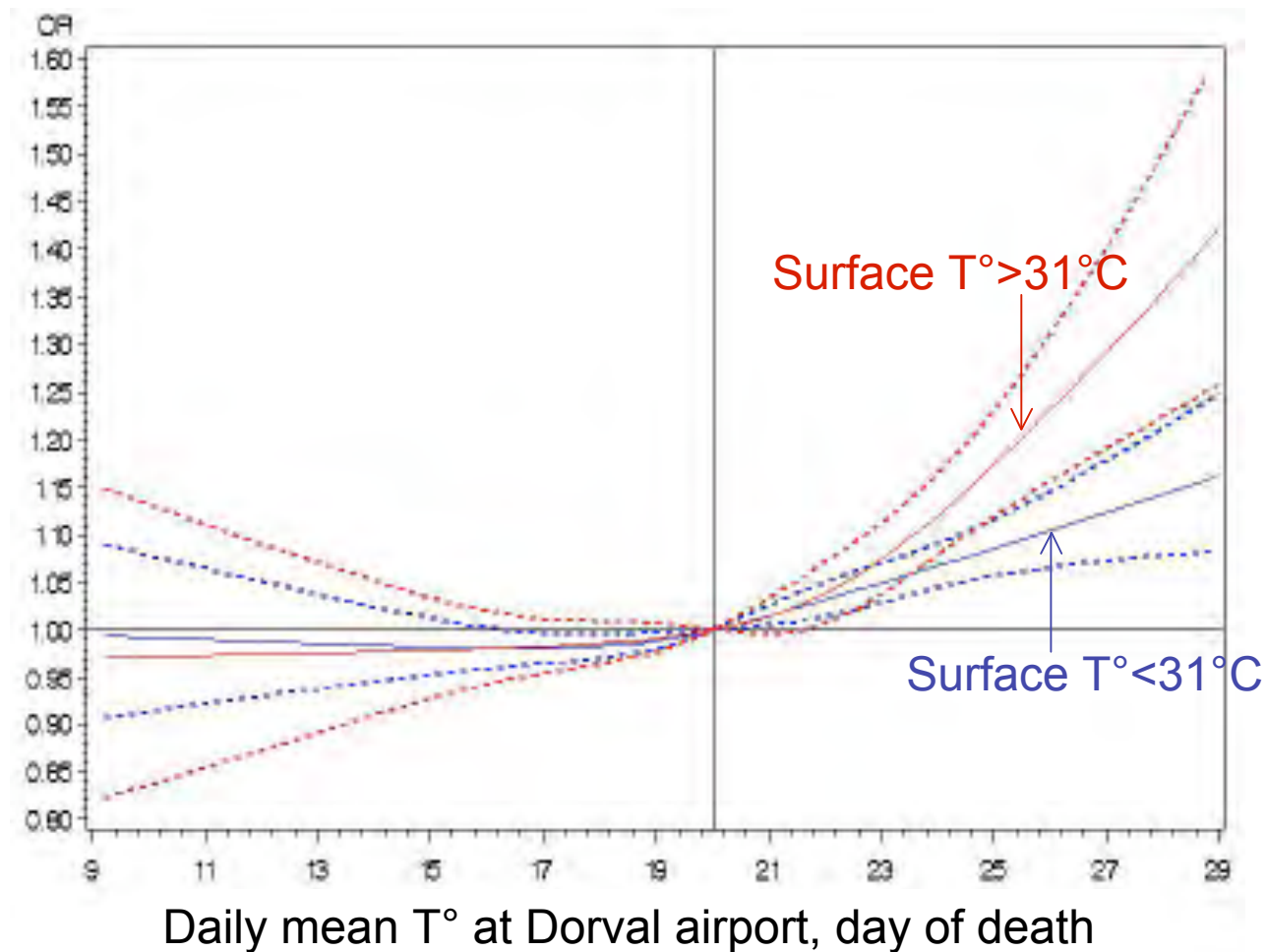
# Montreal's heat island, Landsat thermal image, 2003 (F Guay)



# Satellite imagery-based heat capture index, Montreal (the redder, the hotter)



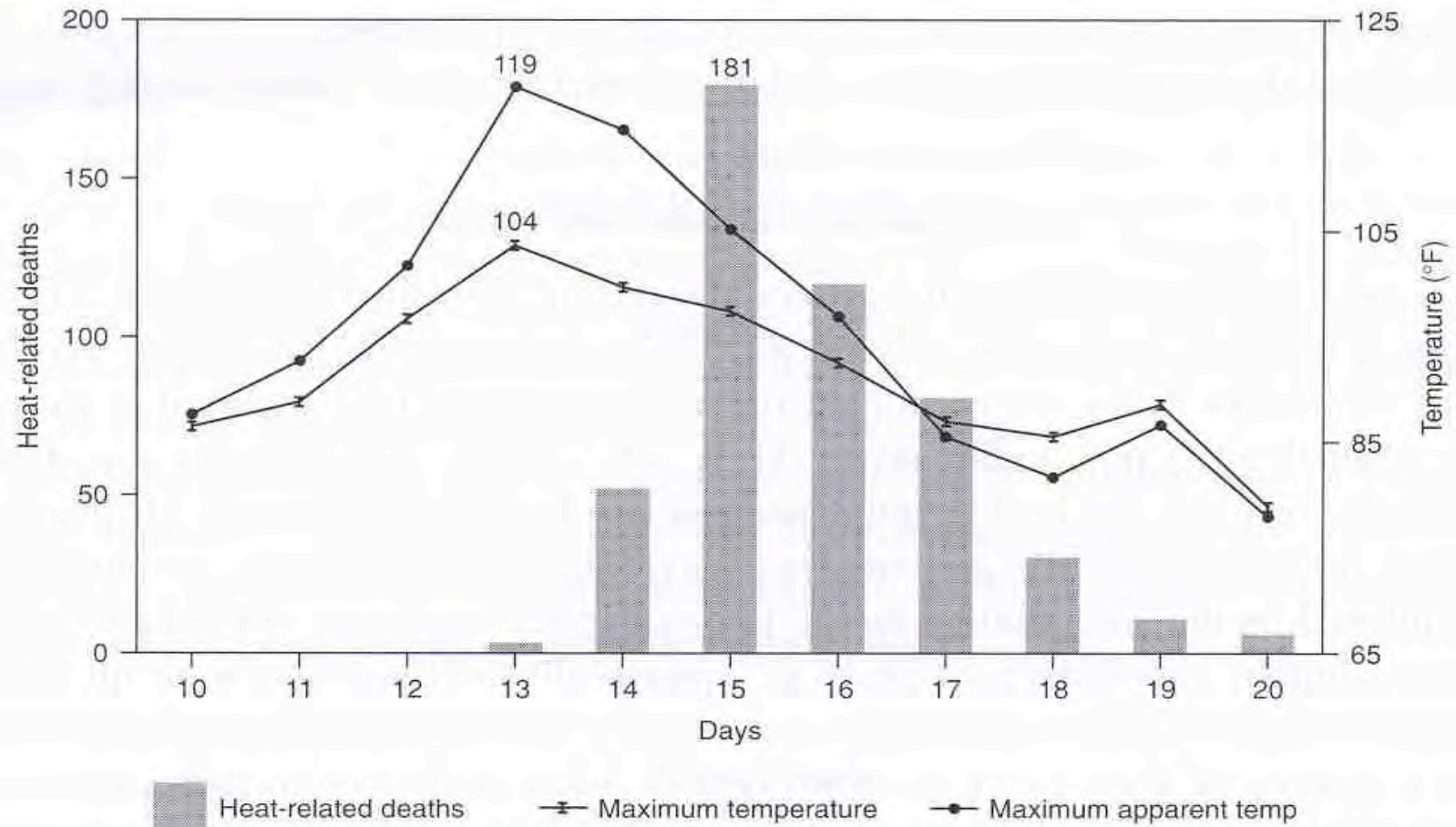
# Acute mortality risks in hot versus cool Montreal neighbourhoods, 1990-2003\*\*



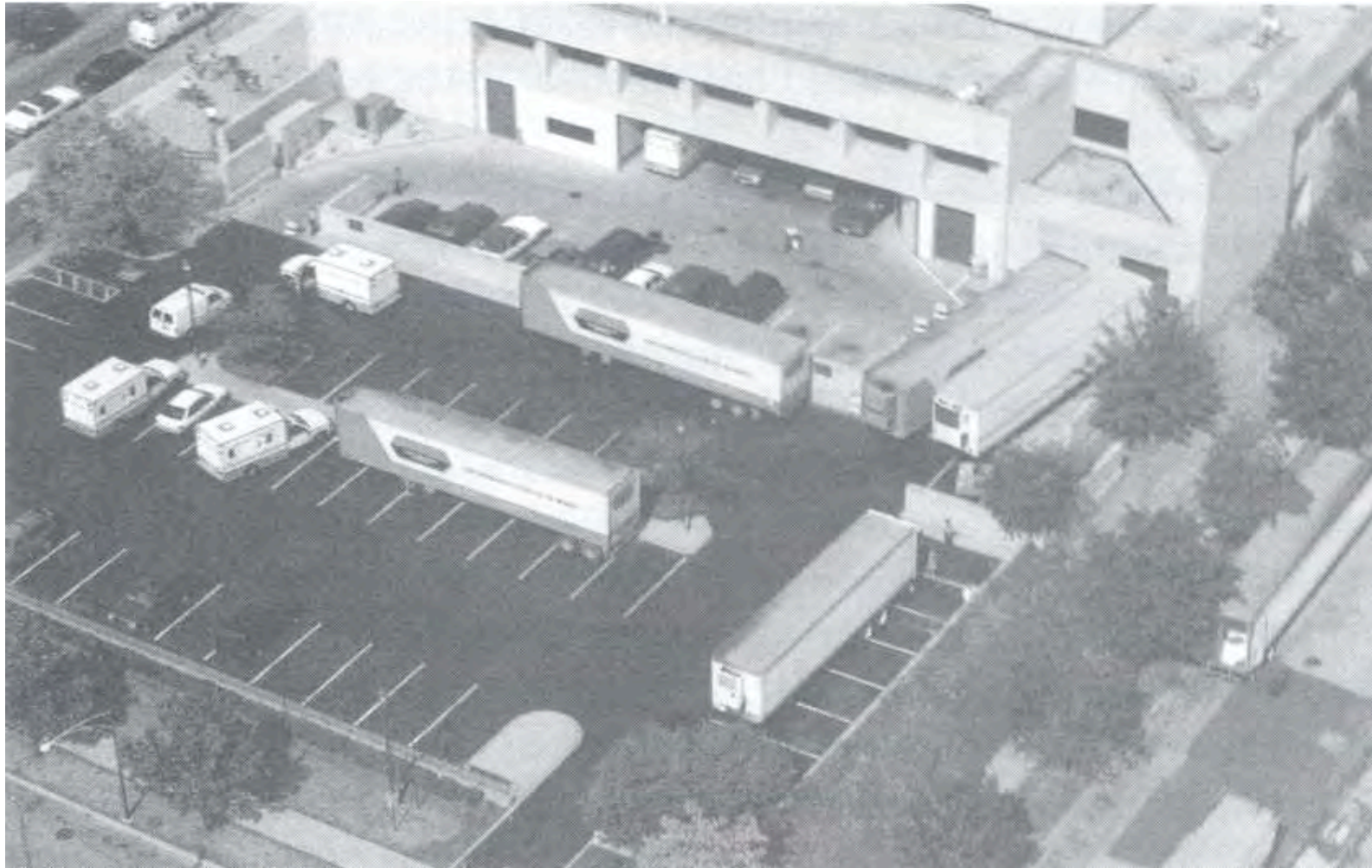
\*\*Smargiassi et al., *Epi and Comm Health*

# Heat-related deaths in Chicago during July 1995

Semenza, NEJM 1996



# Heat wave, Chicago, 1995: refrigerator trucks outside city morgue



Klinebera. 2002

At home

INVESTIGATIVE CASE REPORT - CHICAGO POLICE

1. CLASSIFICATION (Check One) <input checked="" type="checkbox"/> DEATH 5084 <input type="checkbox"/> SUICIDE 5085 <input type="checkbox"/> ATTEMPTED 5086 <input type="checkbox"/> SUICIDE 5086 <input type="checkbox"/> INJURY TO CITIZEN ON 5087 <input type="checkbox"/> PUBLIC PROP 5087 <input type="checkbox"/> INJURY TO CITY EMPLOYEE 5088 <input type="checkbox"/> ACCIDENTAL INJURY 5089			2. BEAT/UNIT ASSIGN 2546		3. BEAT OCCUR 2535		
4. ADDRESS OF OCCURRENCE [REDACTED]				7. DATE OCCURRED JUL 95		8. TIME REPORTING 1900	
9. VICTIM'S NAME [REDACTED]		10. HOME ADDRESS [REDACTED]		11. HOME PHONE [REDACTED]		12. BUSINESS PHONE [REDACTED]	
13. PERSON REPORTING INCIDENT TO POLICE [REDACTED]		14. HOME ADDRESS [REDACTED]		15. HOME PHONE [REDACTED]		16. BUSINESS PHONE [REDACTED]	
17. PERSON DISCOVERING VICTIM [REDACTED]		18. HOME ADDRESS [REDACTED]		19. HOME PHONE [REDACTED]		20. BUSINESS PHONE [REDACTED]	
21. NAMES OF WITNESSES L		22. HOME ADDRESS [REDACTED]		23. HOME PHONE [REDACTED]		24. BUSINESS PHONE K	
25. TYPE PREMISES WHERE OCCURRED/VICTIM FOUND RESIDENCE			26. CAUSE OF INJURY (INSTRUMENT OR MEANS) J		27. REASON (ACCIDENT, ILL HEALTH, ETC.) K		
28. REMOVED BY CFD ENG 35 / BT 2543			29. REMOVED TO COOK COUNTY HOSPITAL		30. NAME/PERSON AUTHORIZING REMOVAL SGT [REDACTED]		
31. SOBRIETY OF VICTIM (Check One) <input type="checkbox"/> 1 SOBER <input type="checkbox"/> 2 MDD <input type="checkbox"/> 3 INTOX <input type="checkbox"/> 4 MINOR <input type="checkbox"/> 5 SERIOUS <input type="checkbox"/> 6 FATAL			32. EXTENT OF INJURIES (Check One) <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6		33. FIRST AID GIVEN BY POLICE <input type="checkbox"/> YES <input type="checkbox"/> NO		
34. MEDICAL AID REFUSED BY VICTIM <input type="checkbox"/>			35. NAME AND ADDRESS OF ATTENDING PHYSICIAN DR [REDACTED] (712) 649-6565 707 N FAIRBANKS		36. PROP. INVENTORY NO. CH40 IL		
37. NARRATIVE (THE INDICATED SOBRIETY OF VICTIM OR WITNESSES IS THE APPARENT CONDITION, WHEN REPORTED)							
<p>IN SUMMARY: R/O'S RESPONDED TO CALL OF CHECK THE WELL BEING AT ABOVE ADDRESS. UPON ARRIVAL, R/O'S NOTED THERE WAS A SUSPICIOUS ODOR EMANATING FROM THE HOUSE WINDOWS. FURTHER, THERE WAS SEVERAL DAYS WORTH OF UNOPENED MAIL AT THE FRONT DOOR. BT 2540 WAS CALLED ON SCENE AND R/O'S WENT INTO RESIDENCE THROUGH THE FRONT WINDOW. UPON ENTRY, R/O'S OBSERVED THE INSIDE OF THE HOUSE TO BE EXTREMELY HOT AND THE WINDOWS WERE SHUT. A SMALL FAN WAS RUNNING IN THE VICTIM'S BEDROOM. VICTIM WAS FOUND IN BED LYING FACE UP AND PARTIALLY DECOMPOSED. THERE WERE NO APPARENT SIGNS OF FAUL PLAY. ALL DOORS WERE LOCKED AND CHAINED FROM THE INSIDE. STATION WAS OUT OF CORDONER SEALS AND R/O'S SECURED RESIDENCE THOROUGHLY. R/O'S SPOKE TO INVESTIGATOR COLLINS AT 2040 HRS. NEIGHBORS (BOX 13) STATED THE LAST TIME THEY SAW VICTIM WAS 12 JUL 95 AT 1200 HRS. ENG 35 ON SCENE TO ASSIST.</p>							
I HAVE READ THIS REPORT AND BY MY SIGNATURE INDICATE THAT IT IS ACCEPTABLE						<input type="checkbox"/> CONTINUED ON REVERSE SIDE	
38. EXTRA COPIES REQUIRED (NO. & RECIPIENT)		39. DATE INVESTIGATION COMPLETED 17 JUL 95 2100		40. SUPERVISOR APPROVING [REDACTED]			
40. REPORTING OFFICER (Print or Type) F 10669		41. REPORTING OFFICER (Print or Type) M 11710		42. SIGNATURE [REDACTED]			
SIGNATURE F		SIGNATURE M		DATE 17 JUL 95 2100			

CPD-11 406 (Rev. 3/83) RACE CODES: 1 - BLACK, 2 - WHITE, 3 - BLACK-HISP, 4 - WHITE-HISP, 5 - AMER INDIAN/ALASK. NAT, 6 - ASIAN/PACIF ISL

Figure 15. A police report notes the conditions of a decedent's apartment: "suspicious odor," "unopened mail," "extremely hot," "windows were shut."

# Heat-related deaths, Chicago, heat wave, summer 1999 (Naughton, 2002)

- Case-control study; 63 cases from surrogate information and 77 controls matched by age and neighborhood
- Living alone (OR = 8.1, 95% CI: 1.4, 48.1) and not leaving home daily (OR = 5.8, 95% CI: 1.5, 22.0) increased risk; having a working air conditioner decreased risk (OR = 0.2, 95% CI: 0.1, 0.7)

**Alone** in his apartment during the  
1995 Chicago heat wave



# **Isolated:** Chicago, abandoned African-American neighbourhood



Figure 29. Ogden Avenue, once a major commercial artery in North Lawndale. Photo by Caitlin Zaloom.

# Nearby Hispanic neighbourhood during the 1995 heat wave: life is outdoors



**Healthy Built Environment and**  
***BC Public Health Act***

Dr. Brian Emerson, Medical Consultant,  
BC Ministry of Healthy Living & Sport

# Public Health Act 2008

**1. Minister can require public bodies to make public health plans** (*sections 3-8*)

**2. Activities that cause health hazards can be regulated**  
i.e. industrial camps, swimming pools, sewerage systems  
(*sections 18-21*)

**"health hazard" means**

**(a) a condition or an activity that**

**(i) endangers, or is likely to endanger, public health**

**(ii) or is likely to interfere, with the suppression of**

**...hazardous agents, or**

**(b) a prescribed condition, thing or activity, that**

**(i) is associated with injury or illness, or**

**(ii) fails to meet a prescribed standard in relation to health, injury or illness**

# Public Health Act 2008 (2)

- **Health Impediments** can be regulated (*section 22*):  
"health impediment" means a **prescribed** condition, thing or activity
  - (a) the cumulative effects of which, over a period of time, are likely to adversely affect public health,
  - (b) that causes significant chronic disease or disability in the population,
  - (c) that interferes with or is inconsistent with the goals of public health initiatives respecting the prevention of injury or illness in the population, including chronic disease or disability, or
  - (d) that is associated with poor health within the population;

## Public Health Act 2008 (3)

- **Inspections** are made and orders issued by health officers regarding hazardous agents and health hazards (*sections 23-50*)
- Provincial Health Officer and medical health officers advise, issue special **reports**, and issue annual reports “**in an independent manner**” (*sections 66, 73*)
- **Local governments are to work with health officials** and must designate a member, officer, or employee as a liaison to the health authority (*sections 83-84*)

# Thank You

Tom Kosatsky

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