



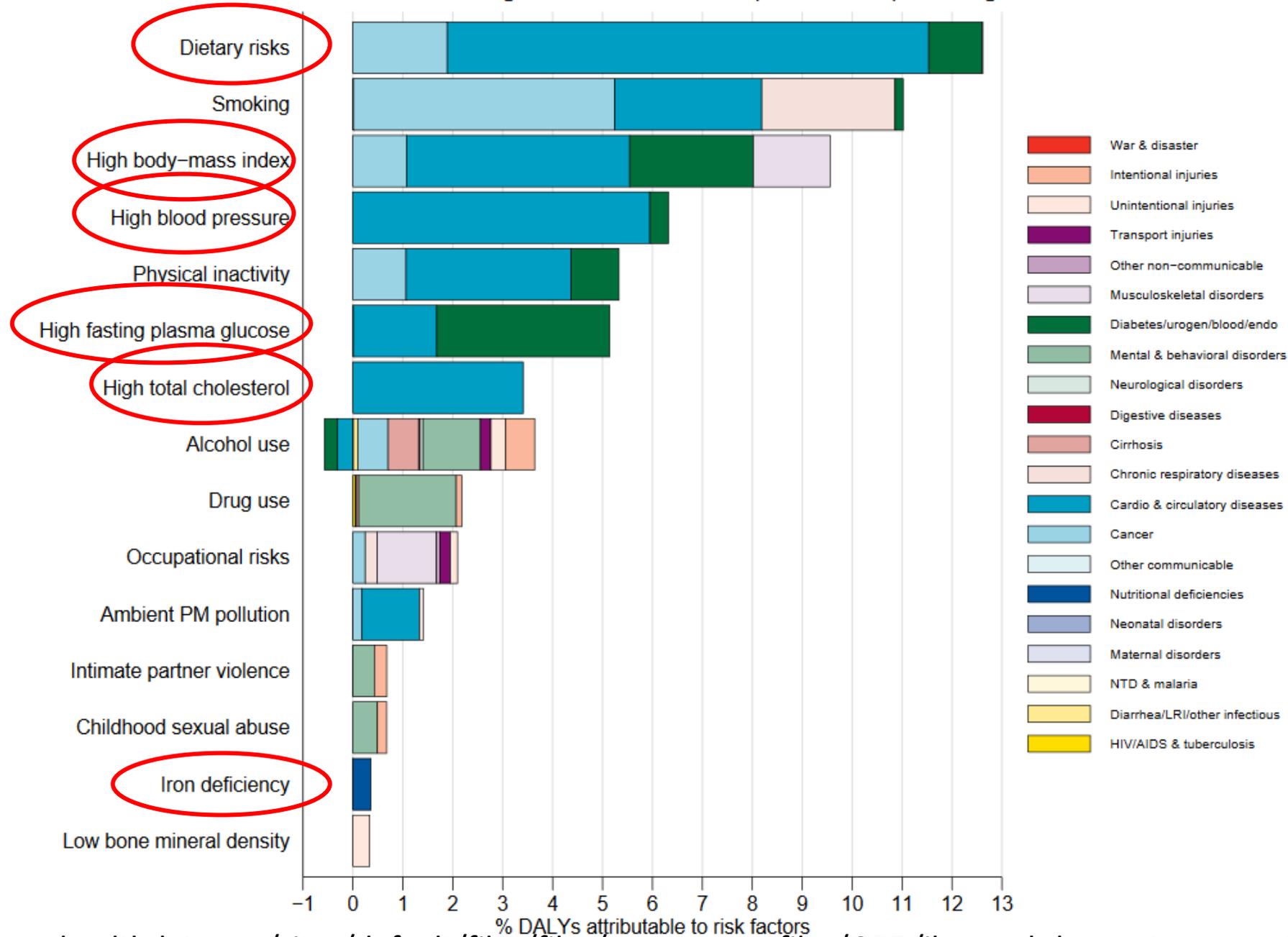
# Policy options for healthier retail food environments in city-regions: the case for a solid measurement foundation

**Leia Minaker PhD**

Assistant Professor  
School of Planning  
Faculty of Environment  
University of Waterloo  
November 2, 2017

# The Problem

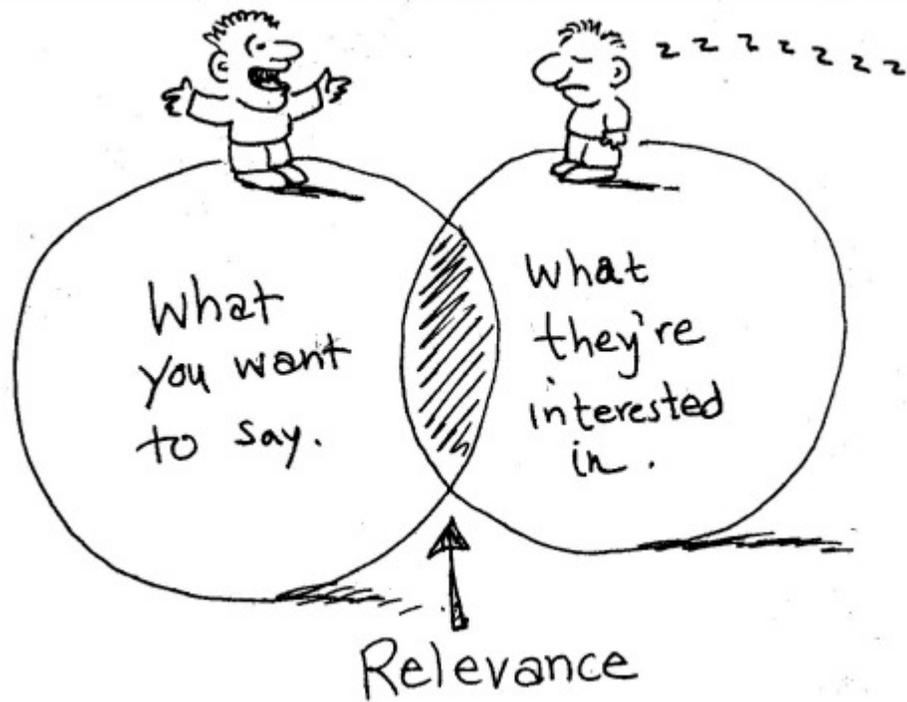
Burden of disease attributable to 15 leading risk factors in 2010, expressed as a percentage of Canada DALYs



# Costs Associated with Diet-Related Chronic Disease in Canada

- Economic burden of inadequate fruit and veg consumption is \$3.3 billion/year in direct (healthcare) and indirect (lost productivity) costs (Ekwaru et al, 2017)
- Obesity cost the Canadian economy up to \$7.1 billion/year (Canadian Institutes for Health Information, 2011). Excess weight cost \$19.0 billion in 2012 (Krueger et al, 2014)
- Direct health care costs of diabetes, cardiovascular disease, cancer: \$19.8 billion in 2015 (Ekwaru et al, 2017)
- Reducing dietary sodium by 1800mg/day projected to save \$414 million annually in Canada (Qureshi et al, 2017)
- Direct health care savings of 20% sugary drink tax is \$11.5 billion (Jones et al, 2017)

# For the non-nutrition-motivated folks...



- Public health inspectors: core work focused on reducing risks & hazards for infectious disease in food, water, wastewater disposal, etc.
- Historically, PH inspectors and doctors were at the forefront of the movement to improve sanitation and hygiene using zoning and urban planning
- Time for a reconnection around upstream determinants of health?

# The food environment



Access to retail cues that influence our food purchasing

Retail food environments

Food purchasing

Food consumption

Diet related chronic disease





ACCESS



AVAILABILITY

# AFFORDABILITY



100%  
Whole Wheat

Wonder  
squeeze me

100%  
Whole Wheat

Wonder  
squeeze me

White

Wonder  
squeeze me

White

Wonder  
squeeze me

White

Wonder  
squeeze me

Whole  
Wheat \$3.19  
Bread

GRAB  
SOME  
GOOD



Poor diets = logical  
response to the food  
environment

**Today's food environments exploit people's biological, psychological, social, and economic vulnerabilities, making it easier for them to eat unhealthy foods (Lancet Obesity Series, 2015)**

# Key Terms



**Deserts vs. Swamps**

# Food Swamps vs. Food Deserts

	<b>Food Swamp</b>	<b>Food Desert</b>
Neighbourhood Deprivation	Deprived	Deprived

# Food Swamps vs. Food Deserts

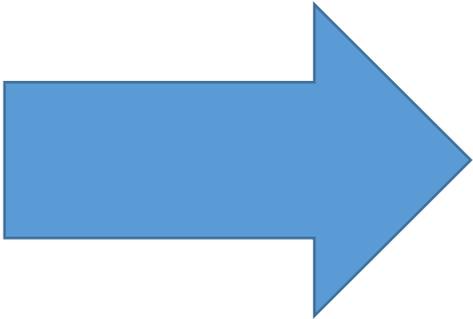
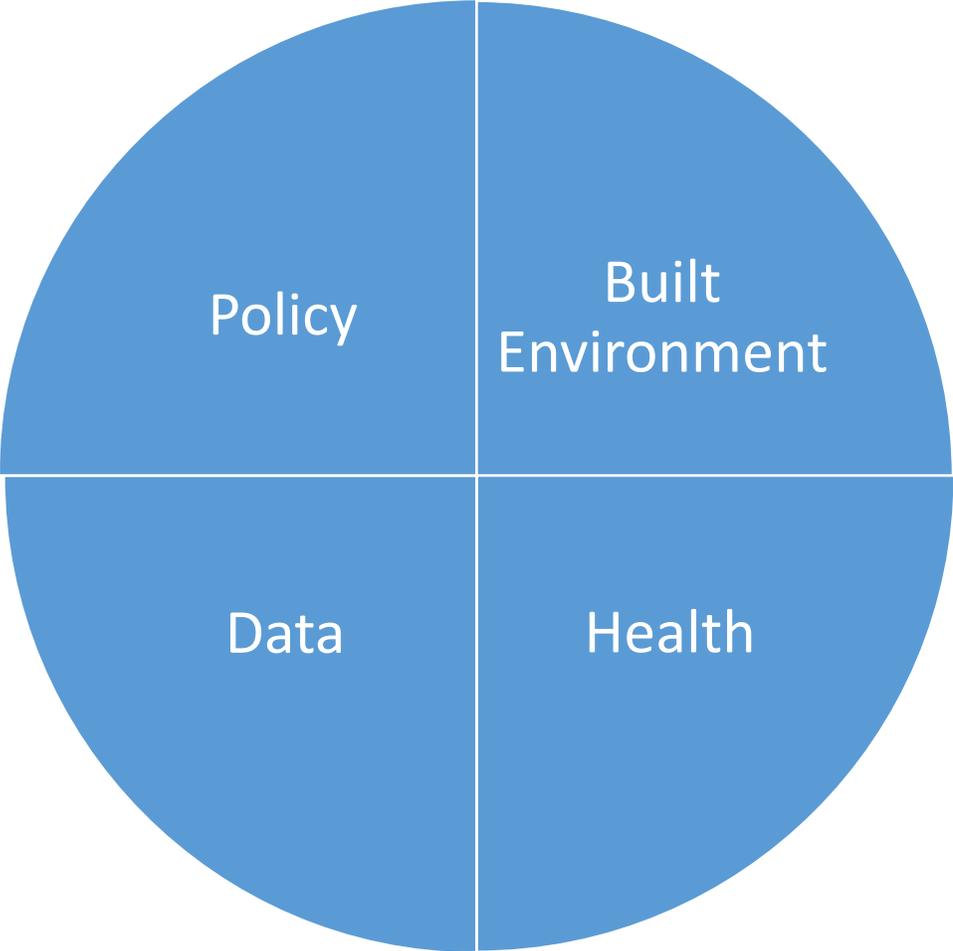
	<b>Food Swamp</b>	<b>Food Desert</b>
Neighbourhood Deprivation	Deprived	Deprived
Focus	Access to unhealthy food	Access to healthy food

# Food Swamps vs. Food Deserts

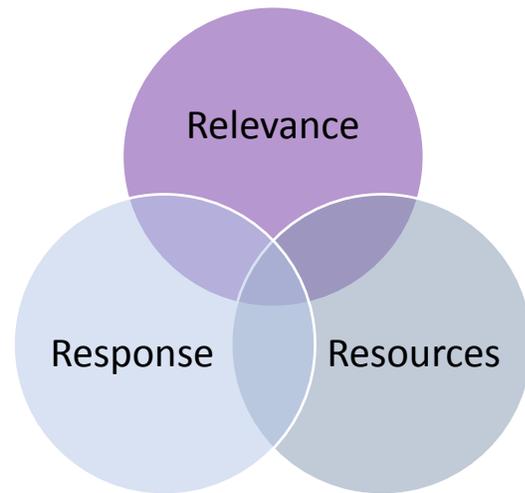
	Food Swamp	Food Desert
Neighbourhood Deprivation	Deprived	Deprived
Focus	Access to unhealthy food	Access to healthy food
Canadian Evidence	13 papers in total <ul style="list-style-type: none"><li>• 0% no</li><li>• 15% maybe</li><li>• 85% yes</li></ul>	22 papers in total <ul style="list-style-type: none"><li>• 73% no</li><li>• 18% maybe</li><li>• 9% yes</li></ul>

# The Measurement Foundation

# The Measurement Foundation



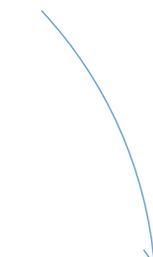
# Before you begin ...



1. RELEVANCE  
Empirical relationships with diet

3. RESPONSE  
What can you do?

2. RESOURCES  
Cost vs. output





# Step 1: Map it

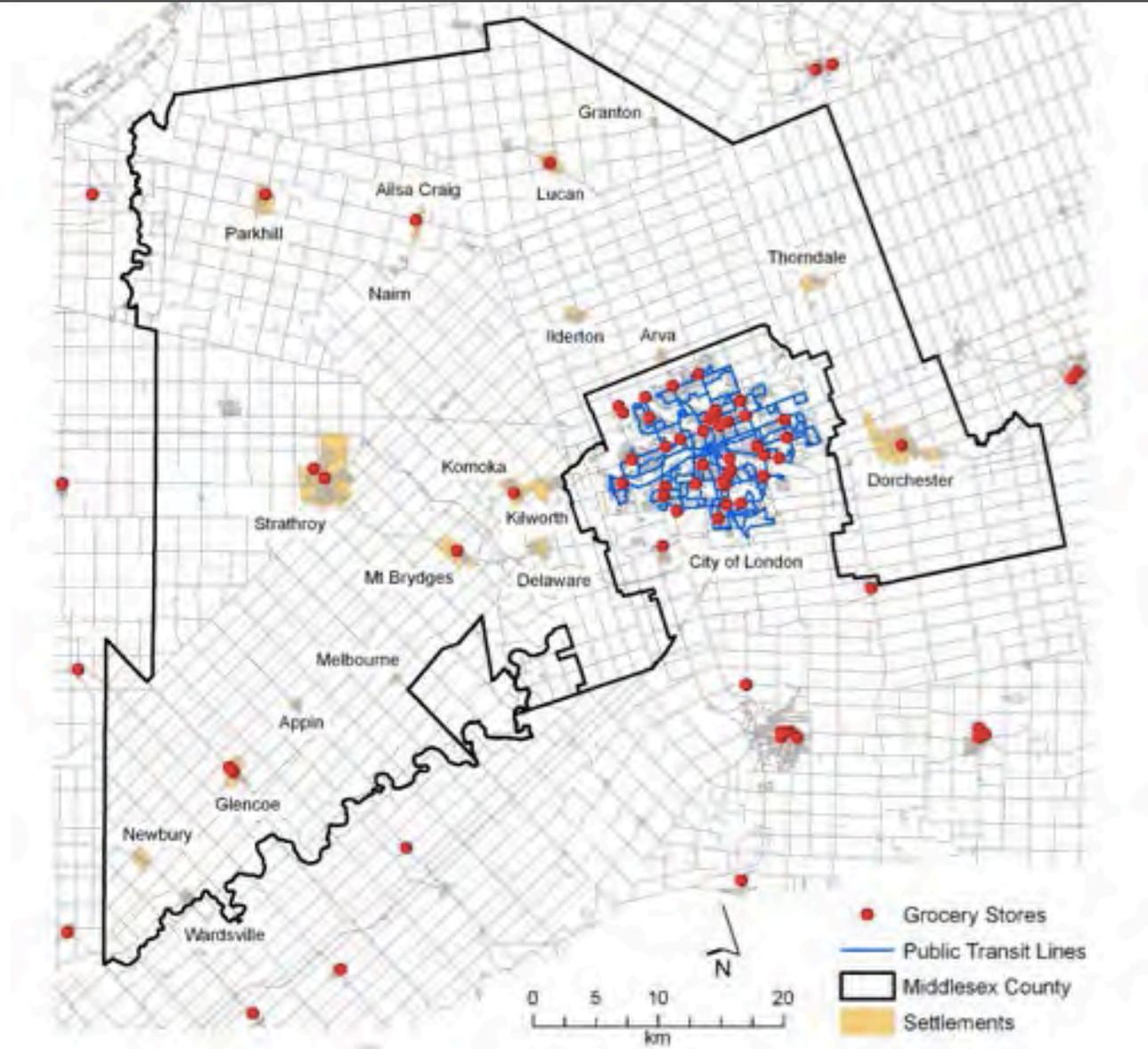


# Map it: Core maps

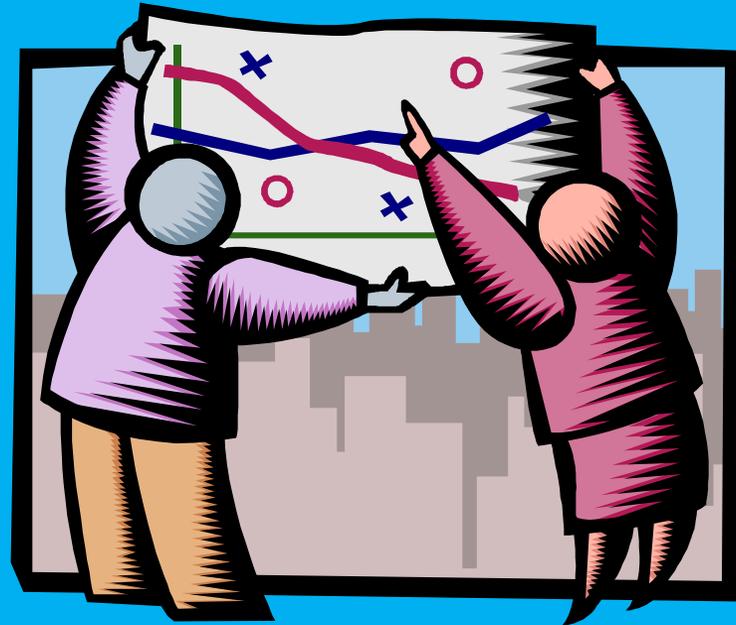
- Where to find data
  - **Administrative data**
  - **Systematic direct observation**
- Categorizing the data
  - **Rules and assumptions** for how data was collected
- How to map it
  - **Define region**
  - Broad (general description) vs. core indicators (proximity, variety, density/intensity) >> derived indicators (e.g., retail food environment index)

... A **starting point** not an end point

# Middlesex County, Ontario



# Step 2: Layer it



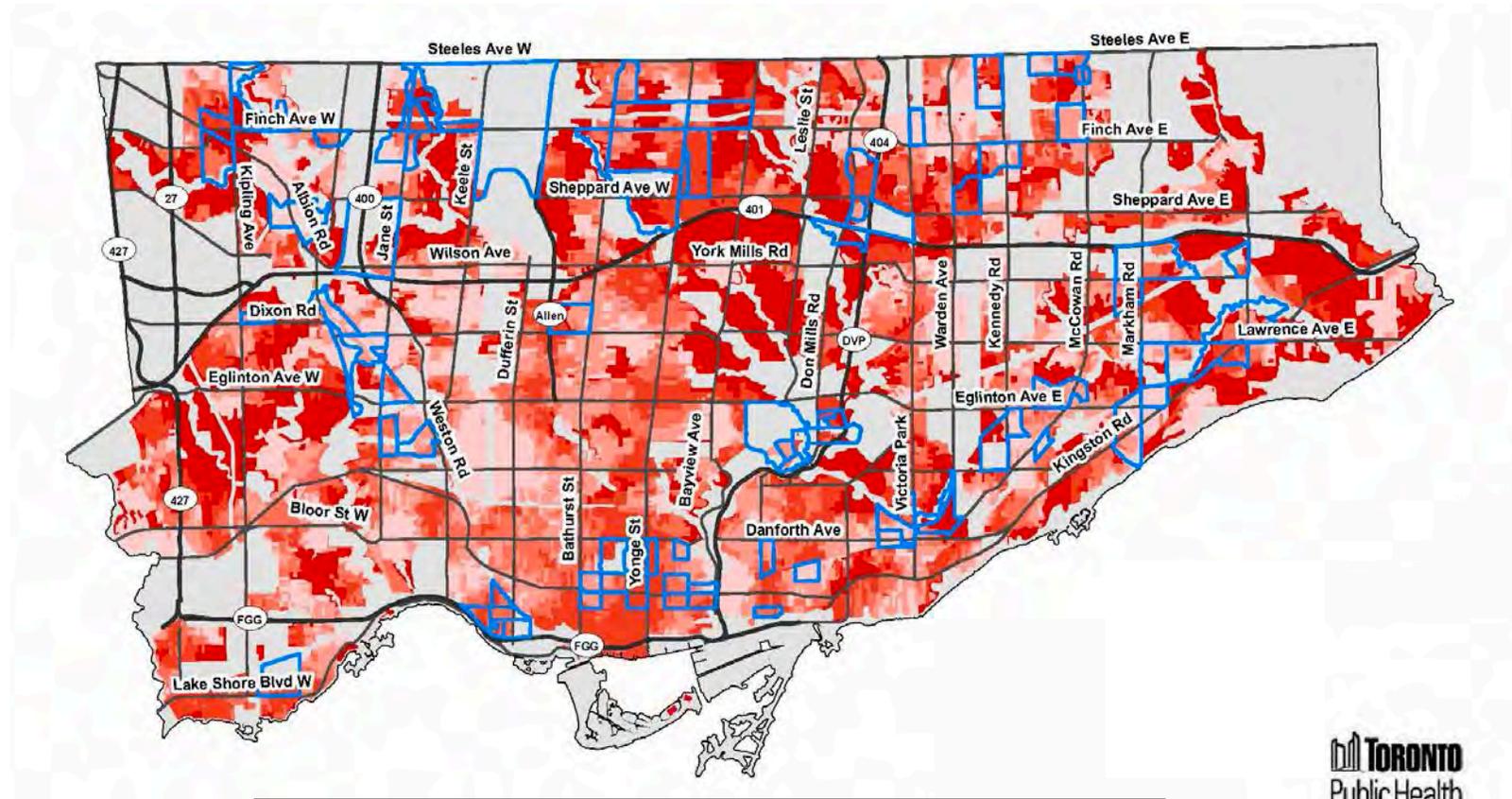
# Layering your maps

- Consumer nutrition environment
  - Shelf-space measures
  - Nutrition Environment Measures Survey
- Socio-demographic data

... Getting closer to understanding relationships:

- **DO keep your question/problem in mind**
- **DON'T over-interpret your map**
- **DO think about context and behaviour, and make new questions**

# Modified Retail Food Environment Index: Toronto



**Darkest red** = "less healthy" food retail environments (1 km radius)  
**Blue lines** = lowest income areas

Urban Region of Waterloo, 2010: Average shelf-space of fruits and vegetables vs. energy-dense snacks within 1km of home



# Step 3: Share it



Data drives people to think—  
stories drive people to act

[OUTSIDE]  
Community Composting Demo Bin

Dry goods  
Toiletries  
Cleaning Supplies  
Diapers...

[OUTSIDE]  
Seasonal Merchandise  
Farmers' Market (Pop-up)



Juice Pop Bev

Meal of the Week

Coffee + Ice Cream Counter

Ice + Propane

Frozen local specialty food  
↳ Moose  
↳ Fish

A, B = Condola shelving  
D = Built Bins  
Coolers: Q, N, R, T, P, S  
K = Crates  
C = Adjustable shelving  
E = Tiered display units

[OUTSIDE]







- 91 mentions of food
- Food Charter supported by the policies in the official plan
  - “All Londoners should have access to food within their neighbourhood.”
    - “Encourage grocery, farmers’ market, and community garden uses in areas that have been identified as a food desert.”

# Region of Waterloo Official Plan

... ensure that development occurring within the Urban Area is planned and developed in a manner that:

- **...facilitates residents' access to locally grown and other healthy foods in neighbourhoods...**





Youth  
Groups

Local  
Retailers

Economic  
Development

Health  
Groups

Seniors  
Groups

Distributors

Business  
Improvement  
Areas

Local  
Producers

**Step 4: Act on it**



**What's  
NEXT?**

- Gathering more evidence
- Influencing programs
- Influencing policies



What's  
NEXT?

- Gathering more evidence
- Influencing programs
- Influencing policies



**City-Region Policy  
options for  
Healthier Retail  
Food Environments**

Planning for  
Health

Transforming  
Consumer  
Environments

Economic  
instruments

Participatory  
culture

# Planning for Health

- Zoning
  - Incentive Zoning
  - Conditional Zoning
  - Performance Zoning
- Urban Agriculture
- Transportation

# Transforming Consumer Environments

- Licensing
  - E.g., mobile good food markets
  - Can influence consumer experiences in neighbourhoods, and requires substantial cooperation of public & private sector
- Health & Social development
  - E.g., Good Food Junction, SK, a cooperatively owned grocery store (now closed)
- Healthy Corner Stores
  - Improve access to healthier options, build demand, change supply chain (?)

# Economic Instruments

- Institutional procurement & organizational nutrition policies
- Economic development
  - E.g., municipal government services, taxes, practical programs for new companies to support innovation in healthy food
- Taxation
  - E.g., Berkely CA first municipality with sugar-sweetened beverage tax

# Participatory Culture

- Information environment for consumers
  - Menu labelling legislation drew evidence from local public health units
- Food policy councils
  - Multi-sector stakeholder groups that set directions for municipal food policy

# Unsolved Mysteries



# Additional Resources



National Collaborating Centre  
for Environmental Health

Centre de collaboration nationale  
en santé environnementale

Search: NCCEH.CA



ABOUT NCCEH ▾

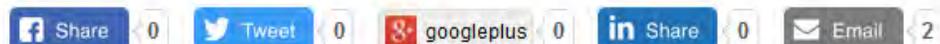
PUBLICATIONS AND PRODUCTS ▾

TRAINING AND EDUCATION ▾

FRANÇAIS

You are here : » Publications and Products » Topic Pages » Food Environments

## Food Environments



Topics: [Built Environment](#), [Food](#)

The foods that people choose to consume are influenced by the availability, affordability, and accessibility of foods in the environments in which they live, work, and play. Defined by the built and social environments, including physical, social, economic, cultural, and political factors, food environments play an important role in shaping diets and eating habits. A healthy food environment provides equitable access to healthy foods such as fruits, vegetables, whole grains, and healthy snack options in various food retail outlets. There is strong evidence linking diet and the risk of developing chronic diseases, including cancer, coronary heart disease, and stroke, as well as health conditions such as hypertension, diabetes, and obesity. As the prevalence of chronic diseases rises in Canada, public health must increase efforts to curtail this trend to prevent an unsustainable growth in the associated healthcare expenditures and economic burden.

This collection of resources:

- Introduces the concept of healthy food environments and how they pertain to public health and environmental health practice
- Includes tools for measuring local food environments, and planning and implementing appropriate interventions
- Provides an overview of the current state of food environments in Canada

### NCCEH Resources

- [Food deserts and food swamps: A primer](#) (2017)

This **primer** discusses food deserts and food swamps and highlights some opportunities for action and collaboration between governments, public health, and business operators.



OCTOBER 2017

# FOOD DESERTS AND FOOD SWAMPS: A PRIMER

Photos by: left Monticello, right Krylov1991 (Getty Images)

[http://www.nccch.ca/sites/default/files/Food\\_Deserts\\_Food\\_Swamps\\_Primer\\_Oct\\_2017.pdf](http://www.nccch.ca/sites/default/files/Food_Deserts_Food_Swamps_Primer_Oct_2017.pdf)

## COMMENTARY

### Policy options for healthier retail food environments in city-regions

Catherine L. Mah, MD, PhD,<sup>1,2</sup> Brian Cook, PhD,<sup>3</sup> Karen Rideout, PhD,<sup>4</sup> Leia M. Minaker, PhD<sup>5</sup>

## ABSTRACT

Public policy is central to health promotion: it determines the distribution of resources in a society and establishes the structural context for the actions of both corporations and consumers. With this in mind, the purpose of this paper is to begin a discussion on promising policy options for a health-promoting retail food environment. Drawing on specific municipal examples, we examine four groups of policy options for healthier retail food environments in city-regions: planning for health; transforming consumer environments; economic and fiscal instruments; and a culture of transparency and participation. We introduce examples of policy options that are receiving increasing attention in the public health and urban planning literature and that function at the municipal level. We also highlight how public health professionals have an important role to play in policy that shapes retail food environments, especially in making explicit the linkages between health and other policy goals. In doing so, this commentary aims to motivate public health practitioners in a variety of community contexts to consider the policy supports they need to advance their exploration, development, testing and evaluation of interventions for healthier retail food environments.

**KEY WORDS:** Policy; social planning; environment and public health; food supply

La traduction du résumé se trouve à la fin de l'article.

*Can J Public Health* 2016;107(Suppl. 1):eS64–eS67  
doi: 10.17269/CJPH.107.S343



National Collaborating Centre  
for Environmental Health

Centre de collaboration nationale  
en santé environnementale

DECEMBER 2015

## Food Environments: An Introduction for Public Health Practice

Karen Rideout<sup>1</sup>, Catherine L. Mah<sup>2</sup>, and Leia Minaker<sup>3</sup>

<sup>1</sup> BC Centre for Disease Control & NCCCH

<sup>2</sup> Faculty of Medicine, Memorial University of Newfoundland

<sup>3</sup> Propel Centre for Population Health Impact, University of Waterloo



## Introduction

This document was written for environmental public health practitioners (environmental health officers and public health inspectors), as well as other public health professionals whose work relates to healthy environments (e.g., medical health officers, public health dietitians, health promotion professionals). It introduces the concept of food environments,

Thank you for listening!  
Leia Minaker [lminaker@uwaterloo.ca](mailto:lminaker@uwaterloo.ca)  
 @leiaminaker



Canadian Cancer Society  
Société canadienne  
du cancer

UNIVERSITY OF  
**WATERLOO**

