

To view an archived recording of this presentation please click the following link:



<http://pho.adobeconnect.com/p7imwal1w46n/>

Please scroll down this file to view a copy of the slides from the session.

Disclaimer

This document was created by its author and/or external organization. It has been published on the Public Health Ontario (PHO) website for public use as outlined in our Website Terms of Use. PHO is not the owner of this content. Any application or use of the information in this document is the responsibility of the user. PHO assumes no liability resulting from any such application or use.

Helpful tips when viewing the recording:

- The default presentation format includes showing the “event index”. To close the events index, please click on the following icon  and hit “close”
- If you prefer to view the presentation in full screen mode, please click on the following icon  in the top right hand corner of the share screen

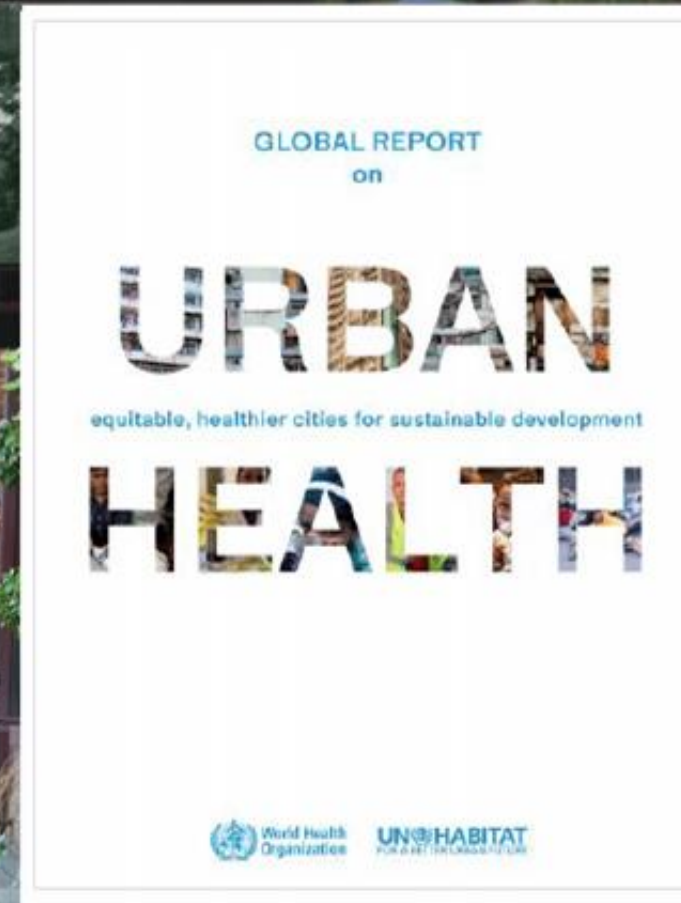
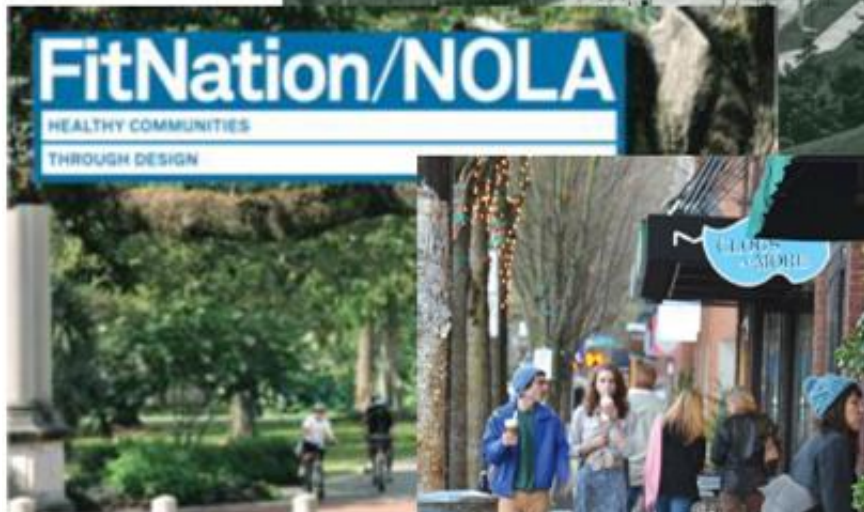


Improving our Community Environments for Health

Dr. Karen Lee MD MHSc FRCPC – Director, Housing for Health; Assoc Professor, Div of Preventive Medicine, Dept of Medicine, UofA

kkl1@ualberta.ca

www.drkarenlee.com



FOOD RETAIL EXPANSION to SUPPORT HEALTH



DISCLOSURES

- None of the presenters at this session have received financial support or in-kind support from a commercial sponsor.
- **The Housing for Health project has been made possible in part through funding from the Public Health Agency of Canada**

(Disclaimer: The views expressed herein do not necessarily represent the view of the Public Health Agency of Canada)

OBJECTIVES

Learning Objectives for This Session:

- Summarize the burdens of NCDs in Canada and globally
- Identify three key findings from the evidence for built environment and policy interventions for NCDs
- Discuss the policy and practice implementation opportunities for built environment approaches to NCDs and health equity through lessons from various jurisdictions and current initiatives

THE 19th & 20th CENTURIES:

Infectious Diseases (IDs)

Reproductive Health (Maternal/Infant Health)

Safety Issues

THE LATE 20th & 21st CENTURIES:

Chronic Diseases

Aging Populations

Mental Health

**Climate Change/
Environmental Pollution**

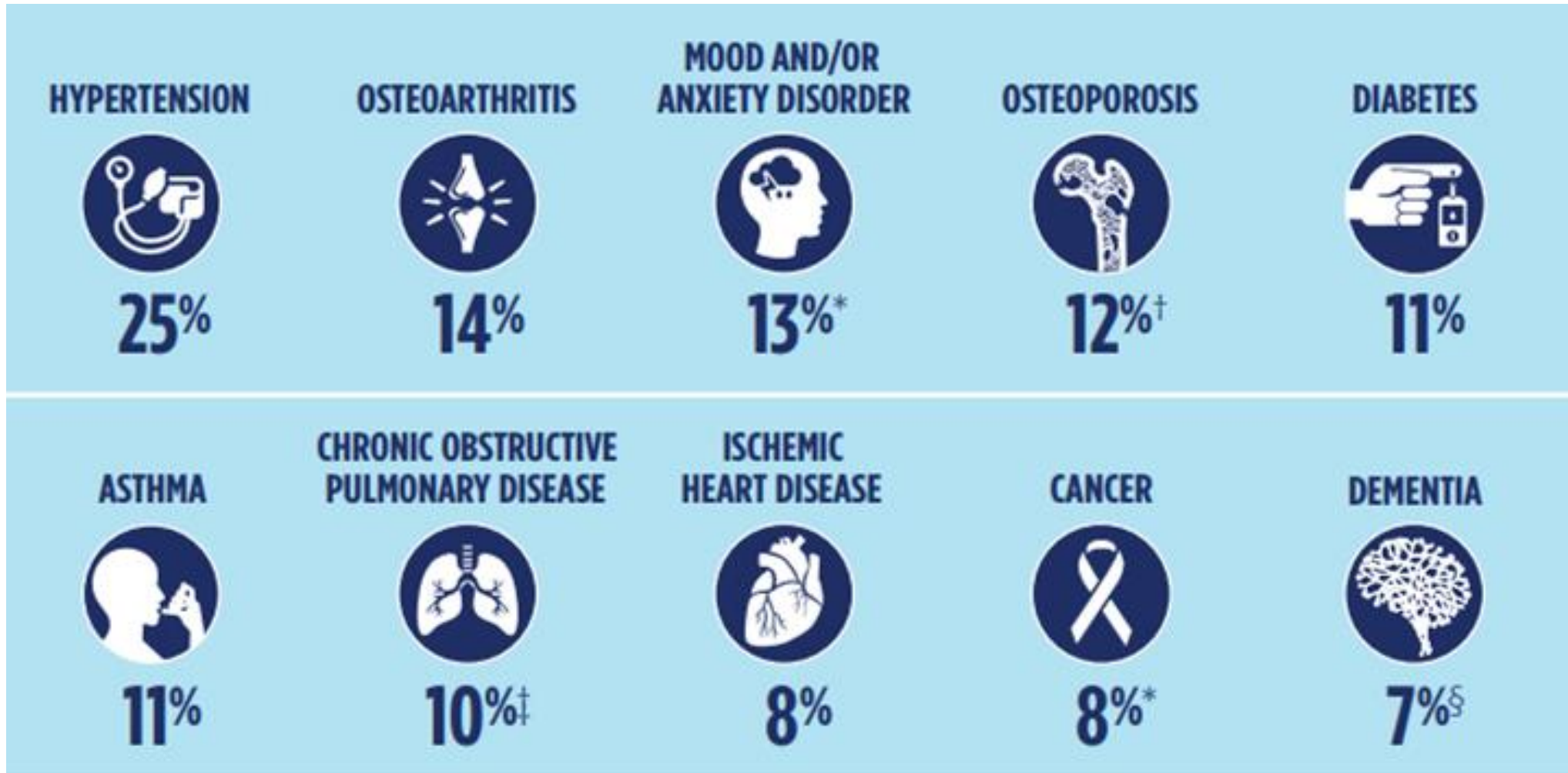
**[Emerging IDs
(e.g. Antibiotic resistance)**

Preventable Injuries]

HIGH BURDENS OF CHRONIC DISEASE in CANADA



HIGH BURDENS OF CHRONIC DISEASE in CANADA



Non-Communicable Diseases (including Heart Disease & Strokes, Cancers, Diabetes, Chronic Lung Disease)

Chronic Diseases - #1 cause of death globally (41 million deaths/y;
71% of deaths).

Leading Risk Factors accounting for large % of deaths:

- Tobacco (6m deaths/y)
- **Physical Inactivity (3.2m deaths/y)**
 - **Unhealthy Diets**
- Harmful Use of Alcohol (2.3m deaths/y)
- **High Blood Pressure (7.5m deaths/y)**
- **Overweight and obesity (2.8m deaths/y)**
 - **High Cholesterol (2.6m deaths/y)**
- Cancer-associated infections (2m deaths/y)

WHO, 2018 - <https://www.who.int/nmh/publications/ncd-profiles-2018/en/>

WHO, 2016 - http://www.who.int/kobe_central/measuring/urban-global-report/ugr_full_report.pdf

HIGH LEVELS OF PHYSICAL INACTIVITY IN CANADA

HEY CANADA!



are getting the minimum recommended amount of **PHYSICAL ACTIVITY** needed for health benefits.

Adults need **150** MINUTES PER WEEK of moderate-to-vigorous physical activity

Children need at least **60** MINUTES PER DAY of moderate-to-vigorous physical activity

Source: Active Healthy Kids Canada (2013). Are We Driving our Kids to Unhealthy Habits? 2007-2011 Canadian Health Measures Survey



participACTION.com



95% of Canadian Kids **DON'T GET ENOUGH PHYSICAL ACTIVITY.**

5-17 year olds should get at least

60 MINUTES OF MODERATE-TO-VIGOROUS

PHYSICAL ACTIVITY EVERYDAY!

Encourage kids to:



WALK



BIKE



SWIM



PLAY

Source: Active Healthy Kids Canada (2013). Are We Driving our Kids to Unhealthy Habits?



participACTION.com

ICES Study in Ontario:

~32% of hospital days are at least partly attributable to physical inactivity, diet, smoking and alcohol, translating to 22% of total healthcare costs.

INCREASING MENTAL HEALTH PROBLEMS AND ILLNESSES

“In any given year, 1 in 5 Canadians experiences a mental illness or addiction”
(CAMH, 2020)

One of the leading causes of disability in Canada

“The economic burden of mental illness in Canada is estimated at \$51 billion per year. This includes health care costs, lost productivity, and reductions in health-related quality of life” (CAMH, 2020)

SOCIAL FACTORS CONTRIBUTING TO MULTIPLE 21ST CENTURY PRIORITIES: SOCIAL ISOLATION AND LACK OF SOCIAL SUPPORT

“...**belonging support** characterized by interaction with friends, family, and other groups was a **consistent predictor** of self reported disease outcomes (included **diabetes, hypertension, arthritis and emphysema**) in elderly populations”

Robin and Uchino (2008) found that “those who had **lower social involvement** were **1.5 times** more likely to have a first [heart attack]”

SOCIAL FACTORS CONTRIBUTING TO MULTIPLE 21ST CENTURY PRIORITIES: WORK STRESS

“Poor mental health outcomes are associated with precarious employment (e.g. non-fixed term temporary contracts, being employed with no contract, and part-time work) (Artazcoz et al., 2005; Kim et al., 2006). Workers who perceive **work insecurity** experience significant **adverse effects on their physical and mental health** (Ferrie et al., 2002)...

Stress at work is associated with a **50% excess risk of coronary heart disease** (Marmot, 2004; Kivimäki et al., 2006), and there is **consistent evidence that high job demand, low control, and effort-reward imbalance are risk factors for mental and physical health problems** (Stansfeld & Candy, 2006).”

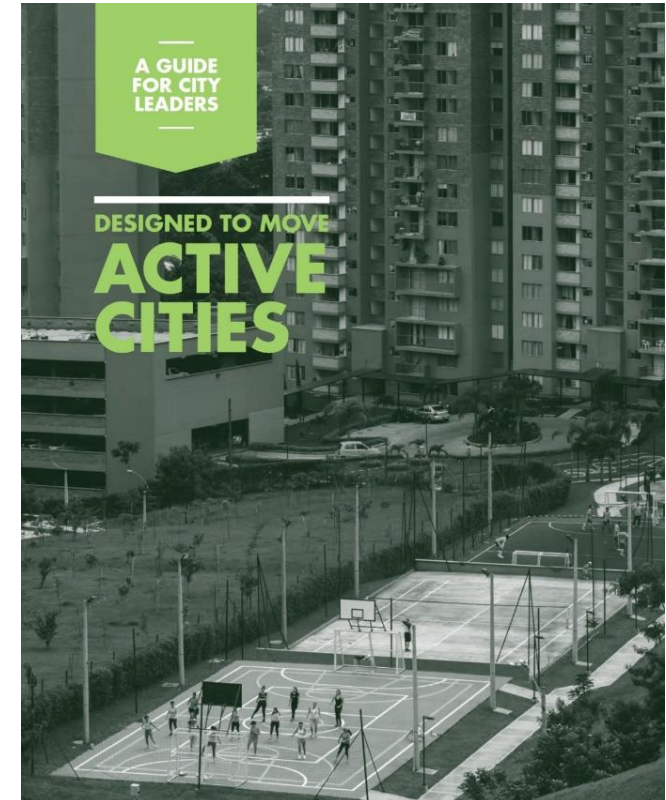
- World Health Organization, 2008 -

http://apps.who.int/iris/bitstream/10665/43943/1/9789241563703_eng.pdf

EVIDENCE-BASED SOLUTIONS

Community Design

- **Design elements:**
 - Closeness of residential areas to stores, jobs, schools, and recreation areas
 - Continuity and connectivity of sidewalks and streets
 - Aesthetic appeal and safety of the physical environment
- **Policies:**
 - Zoning regulations
 - Building codes
 - Builders' practices
 - Government policies
- **Associated outcomes:**
 - 161% median improvement in Physical Activity
 - Increased sense of community and decreased isolation
 - Reduced crime and stress



EVIDENCE-BASED SOLUTIONS

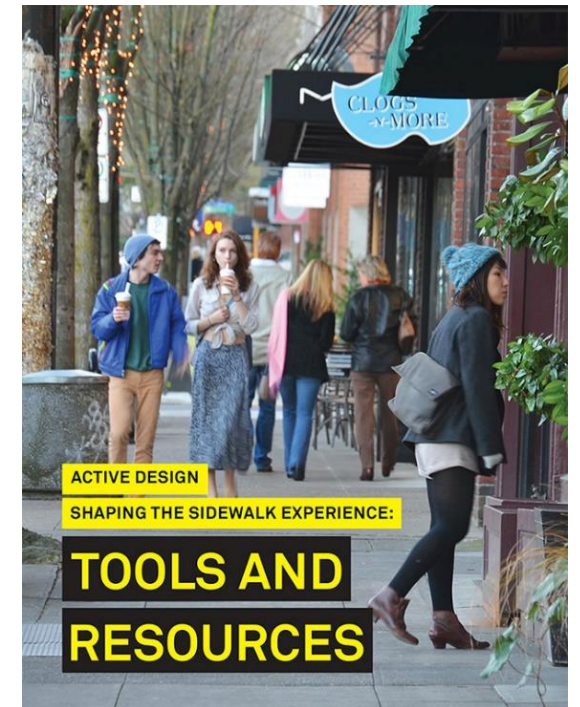


EVIDENCE-BASED SOLUTIONS

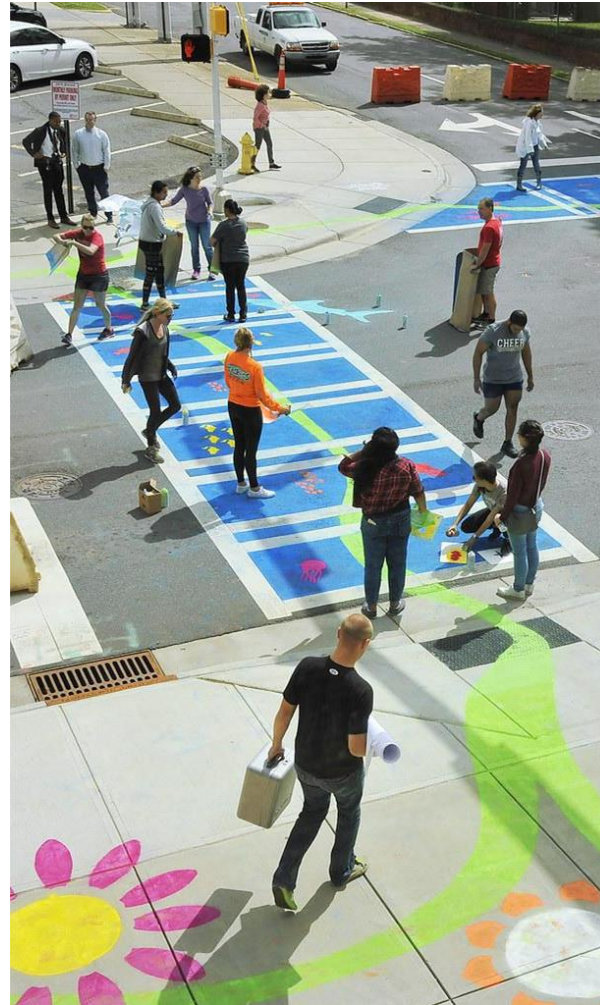
Street Design



- Design elements:
 - Improved street lighting
 - Infrastructure to increase safety of street crossing
 - Traffic calming approaches (e.g., speed humps, traffic circles)
 - Enhancing landscaping
- Policies:
 - Building codes
 - Roadway design standards
 - Environmental changes
- Associated outcomes:
 - 35% median improvement in Physical Activity
 - Increased sense of community and decreased isolation
 - Reductions in crime and stress



EVIDENCE-BASED SOLUTIONS



EVIDENCE-BASED SOLUTIONS



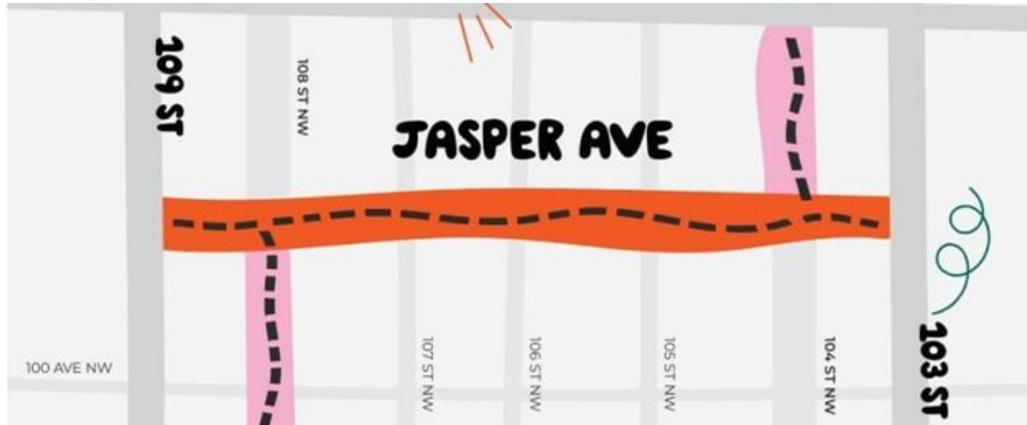
New York City Summer Streets



~7 continuous miles of street closures:

- Streets closed to cars and **open for walking, cycling and group recreation** (e.g. yoga, dancing, etc.)
- Non-routine exercisers (don't meet recommended PA guidelines) engaged in equivalent of 26-68 mins moderate-vigorous activity
- **87%** of participants used **active transportation to event**

EVIDENCE-BASED SOLUTIONS



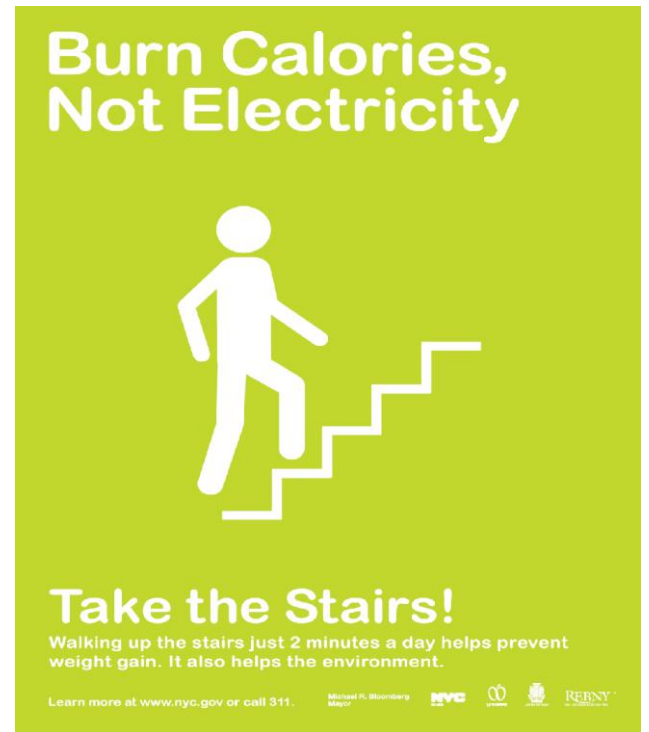
Edmonton Open Streets

EVIDENCE-BASED SOLUTIONS

Building Design



- **Point-of-Decision stair prompt signage:**
 - Signs placed at elevators & escalators encouraging stair use, w/ info on benefits of stair use
 - **Median 50% increase in stair use/physical activity**
- **Skip-stop elevators:**
 - **3300% increase in stair use/physical activity**
- **Design and aesthetic interventions:**
 - Music & art in stairwells
- **Design stairs to be more convenient and visible**
- **Natural lighting in stairwells & stair visibility**



EVIDENCE-BASED SOLUTIONS

Food Environments

Available types of food retail:

- Supermarket availability is associated with lower rates of neighbourhood obesity
- High density of fast food restaurants is associated with increased weight and obesity in area residents

Point-of-Decision in Food Retail: Menu labelling on items such as calories

Trans Fat Exposure in Foods - Associated with increased cardiovascular risk



<https://www.healthyeatingresearch.org> ; <https://www1.nyc.gov/site/doh/health/health-topics/trans-fat-in-new-york-city.page>

Moreland K et al., Supermarkets, other food stores, and obesity. AJPM 2006; 30(4): pp. 333-339. Mehta NK, Chang VW. Weight status and restaurant availability: a multi-level analysis. AJPM 2008; 34(2): pp. 127-133.

Image Credit: <http://www.wesa.org/post/corner-stores-grocery-chains-and-back-pittsburghs-food-systems-are-evolving>; <https://www.toronto.com/things-to-do/toronto-farmers-markets/>

EVIDENCE-BASED SOLUTIONS

Food Environments

Community Gardens:

- People with a household member who participated in a community garden ate more fruits and vegetables per day
- Garden based nutrition education has improved adolescent fruit and vegetable uptake

Access to tap water vs. caloric beverages:

- Water fountain installation and education in elementary schools in deprived neighbourhoods reduced the risk of overweight in children



EVIDENCE-BASED SOLUTIONS

Social Support Mechanisms



- Interventions focused on strengthening social networks that provide supportive relationships for behavior change
 - e.g., setting up buddy activities, walking groups or other groups to provide friendship and support
 - Impacts: Increased physical activity

- US Task Force on Community Preventive Services, 2015, 2016 - www.thecommunityguide.org



EVIDENCE-BASED SOLUTIONS

Worksite Factors



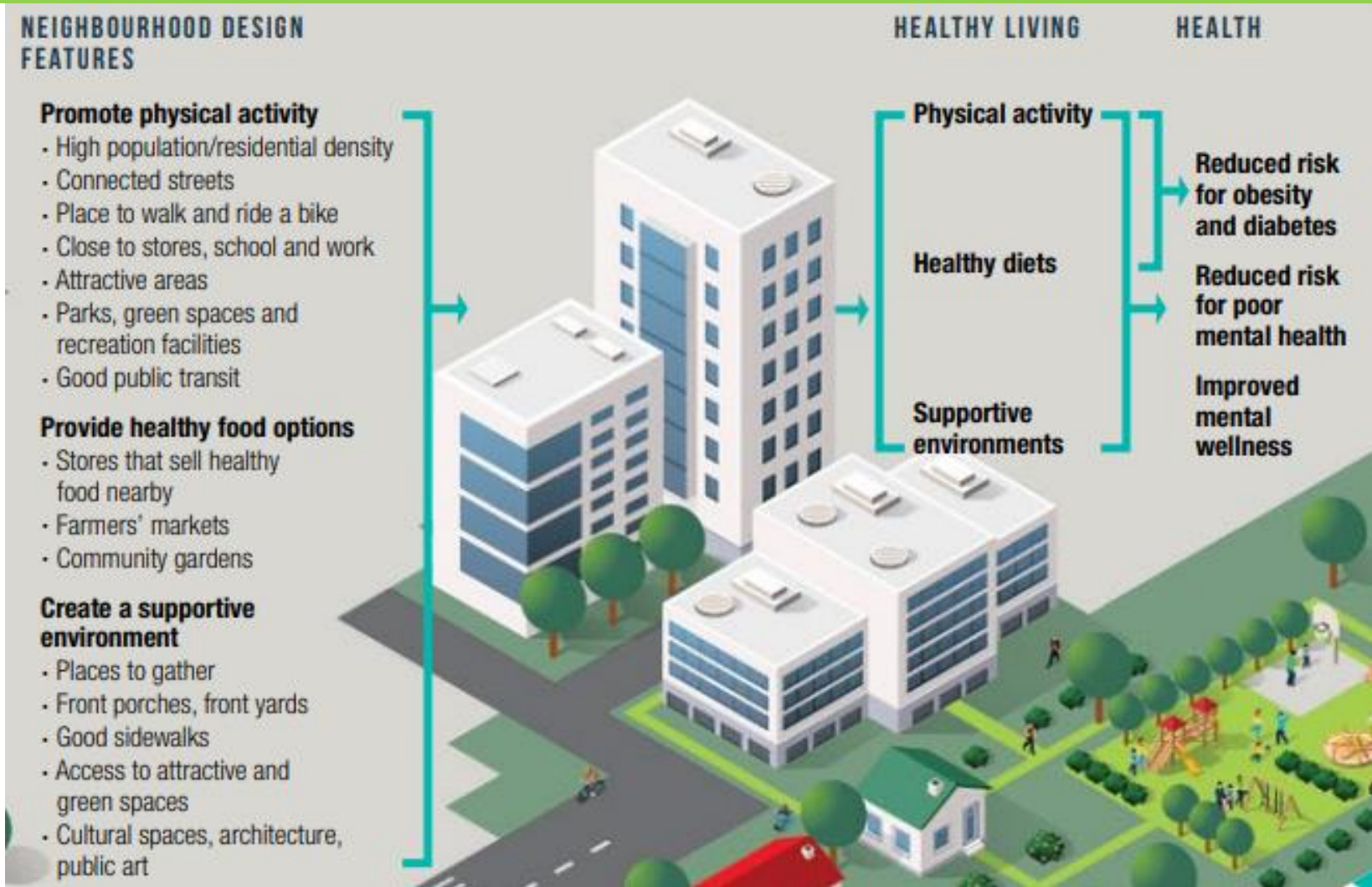
- Information and education (e.g., lectures, written materials, educational software)
- Activities that target awareness & self-efficacy
- **Social factors** that affect behavior change
 - behavioral counseling, skill-building activities, **rewards** or reinforcement, and inclusion of **co-workers or family members to build support systems**
- **Changes to physical or organizational structures that make healthy choices easier** and target the entire workforce
 - making **healthy foods more available**, providing more **opportunities to be physically active**, changing health insurance **benefits**, or providing health club memberships
- **Associated outcomes:**
 - **In RCTs, participating employees lost an average of 2.8 pounds (9 studies) and reduced their average BMI by 0.5 (6 studies) compared to control groups**

EVIDENCE-BASED SOLUTIONS

School Factors

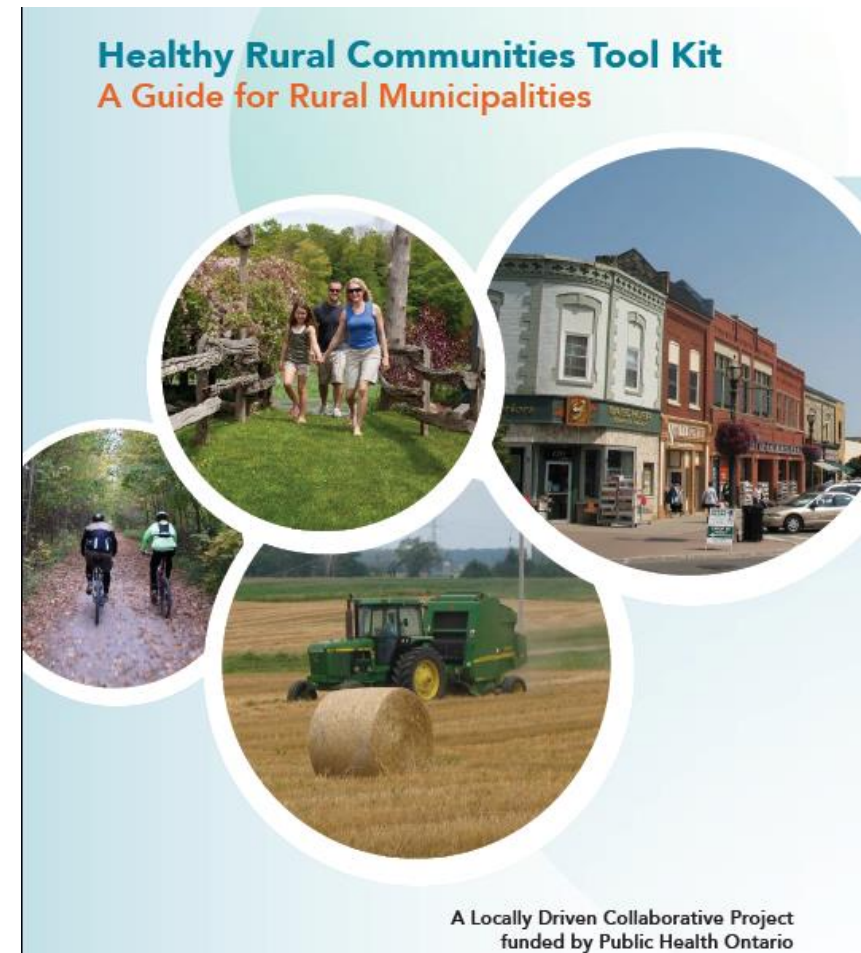
- Implement well-designed **Physical Education** curricula taught by trained teachers
- Combine enhanced school-based PE with other school- and community-based interventions (such as activities that foster family involvement, and community partnerships to increase opportunities for physical activity)
- **Neighbourhood walkability**, and **proximity to homes and route connectivity**
- **Availability of indoor and outdoor physical activity facilities**
- **Proximity to other recreational facilities**
- **Design of playgrounds**
- **Standing desks; moving furniture**
- **School meal policies** that ensure school breakfasts or lunches **meet specific nutrition requirements**
- **Fresh fruit and vegetable programs** that provide **fresh fruits and vegetables to students during lunch or snack**
- **Associated outcomes:**
 - **Reduction or maintenance of obesity rates**
 - **Improved moderate-vigorous physical activity**
 - **Improved academic achievement**

Public Health Agency of Canada (PHAC). *The Chief Public Health Officer's Report on the State of Public Health in Canada 2017 – Designing Health Living.*

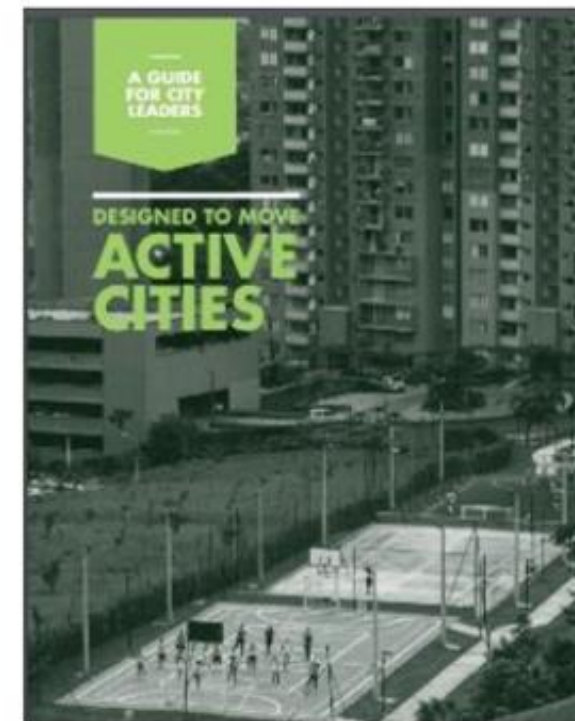
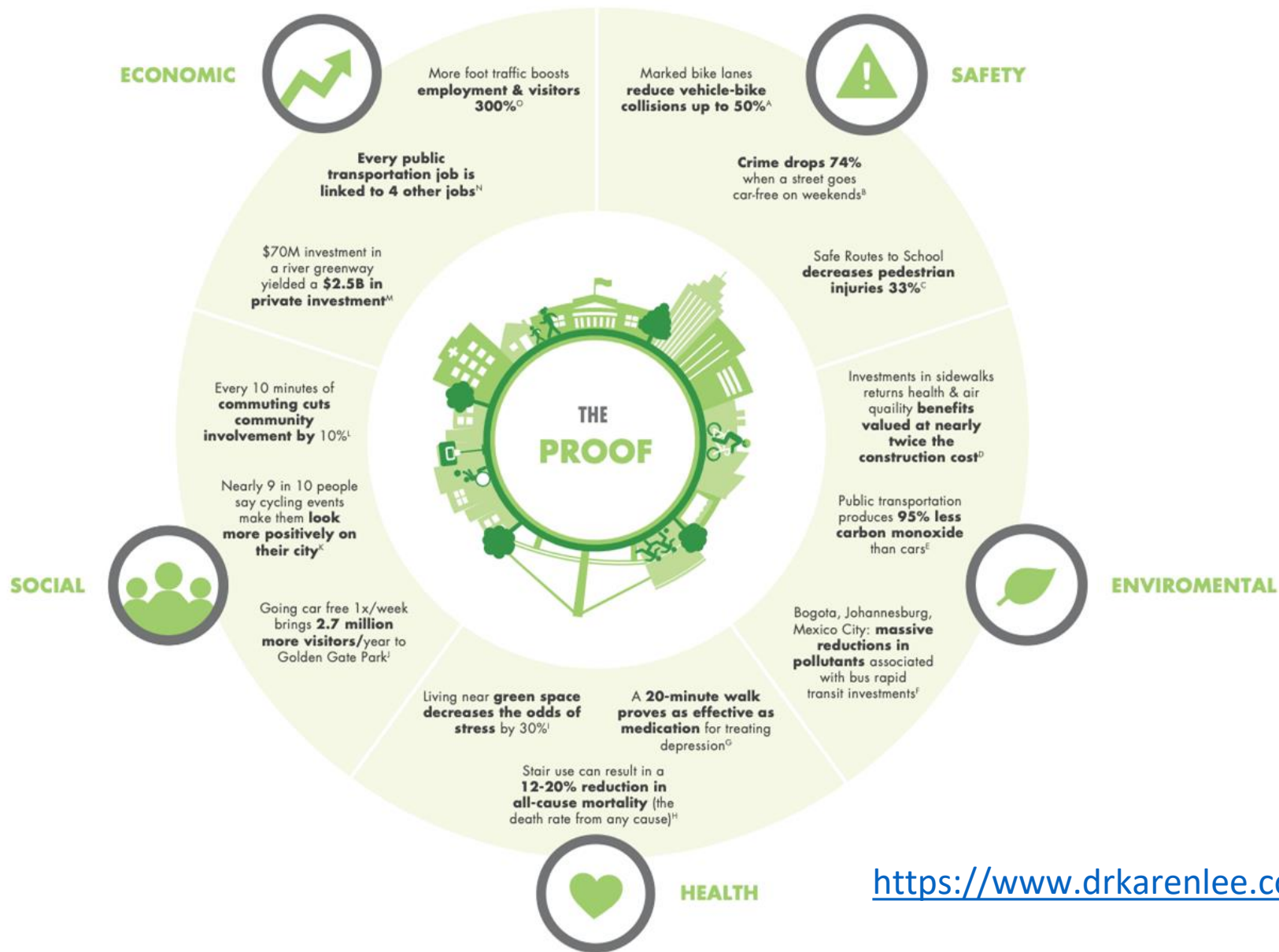


HEALTHY RURAL COMMUNITIES TOOL KIT, 2015

- Municipal planning and development strategies with input from Ontario local public health units
- Some highlighted mechanisms for action
 - Community Design and Land Use Planning
 - Active Transportation
 - Planning for Special Age Groups
 - Cultural Strategies and Revitalization
 - Access to Local Food
 - Nature
 - Safe and Affordable Housing



Co-Benefits of Healthier Communities



Co-Benefits of Healthier Communities

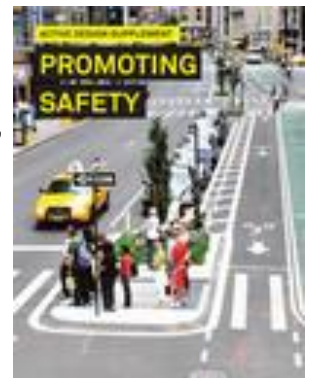
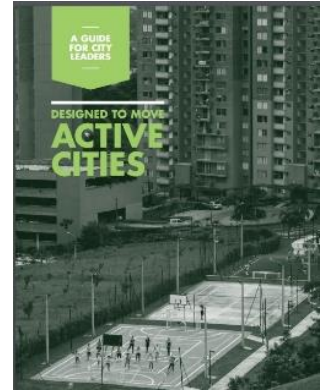
Economic Benefits

- More **foot traffic associated with increased employment and visitors**
- Walking and cycling interventions - average economic **benefit-to-cost ratio 13:1**
- Investments in trails and greenways can stimulate residential, commercial, art, sports and entertainment projects along corridor
- Active design and walkability associated with **higher property values** – properties (both **residential and retail**) with a higher Walk Score have higher property values

Co-Benefits of Healthier Communities

Safety Benefits

- Active environments **safer for crime rates, accidental injuries and collisions**
- In one city, **crime decreased by 74%** on street/park when made car-free on weekends
- Buildings with higher levels of vegetation/gardens and green spaces have fewer total crimes
- Community gardens associated with increased community cohesion, and **reduced graffiti and violence**
- Traffic calming interventions (pedestrian signals, refuge islands, better lighting, marked bicycle lanes, etc.) reduce collisions substantially



CASE STUDY: MANHATTAN, NYC

Expanding an Iconic Space

Speeding decreased by **16%**, while median speeds increased by **14%**

Injury crashes fell by **26%**

49% fewer commercial vacancies (compared to 5% more borough-wide)

74% of users prefer the new configuration



Union Square North

<https://www.nyc.gov/html/dot/downloads/pdf/2012-10-measuring-the-street.pdf>

CASE STUDY: BRONX, NYC

Making Bus Routes Work Better

Fordham Road (Bronx)

20% increase in bus speeds

10% increase in bus ridership

71% increase in retail sales
(at locally-based businesses, compared to 23% borough-wide)

Delivery windows
(curb dedicated to trucks at key times)

Transit signal priority

Curbside red bus lanes



CASE STUDIES: LARGE AND SMALL MUNICIPALITIES

NEW YORK CITY HIGHLINE

NYC Population: 8.4 million

Continuous 1.45-mile elevated greenway

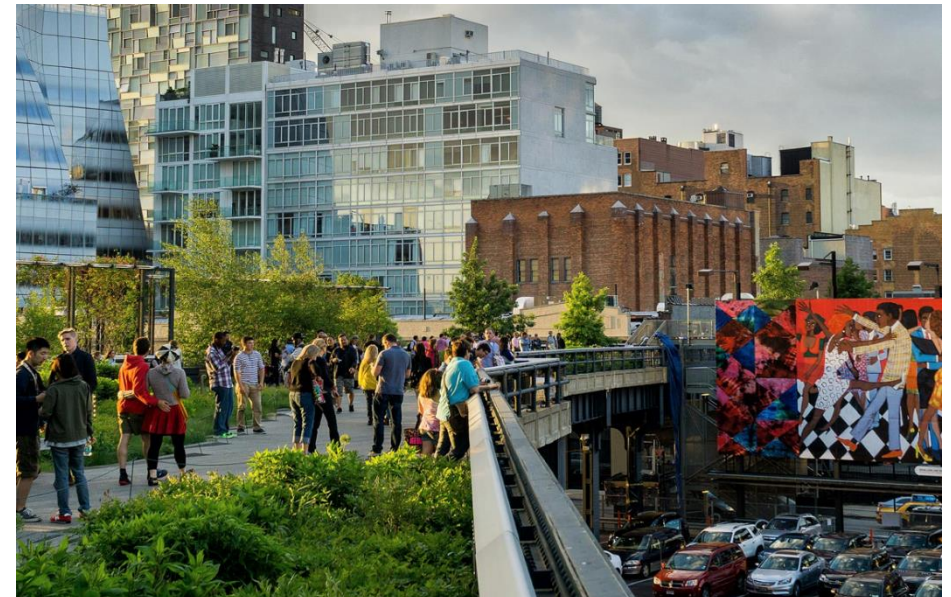
- Unused space scheduled for demolition – labelled “eyesore”

Turned into public park

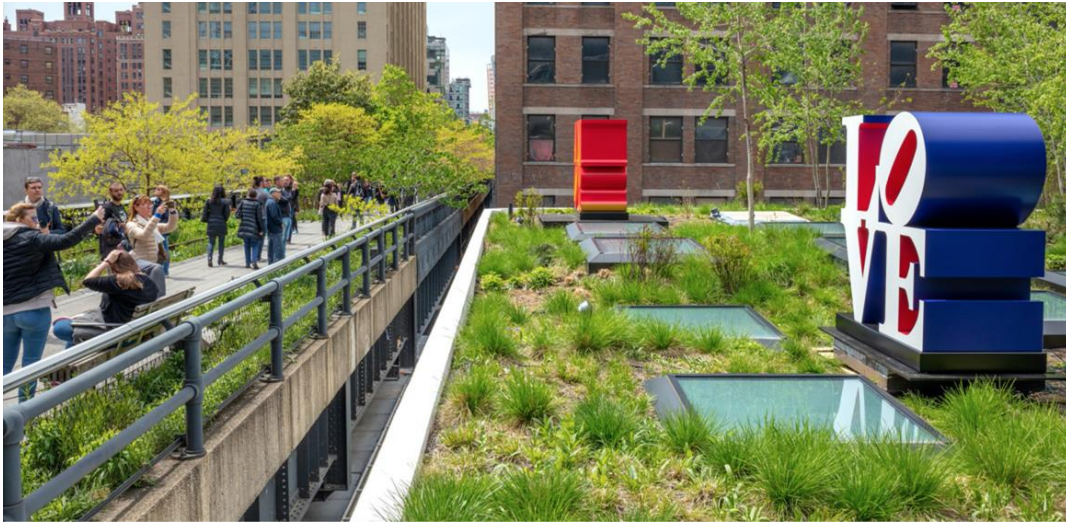
- Area rezoned for transformation

5 million visitors each year

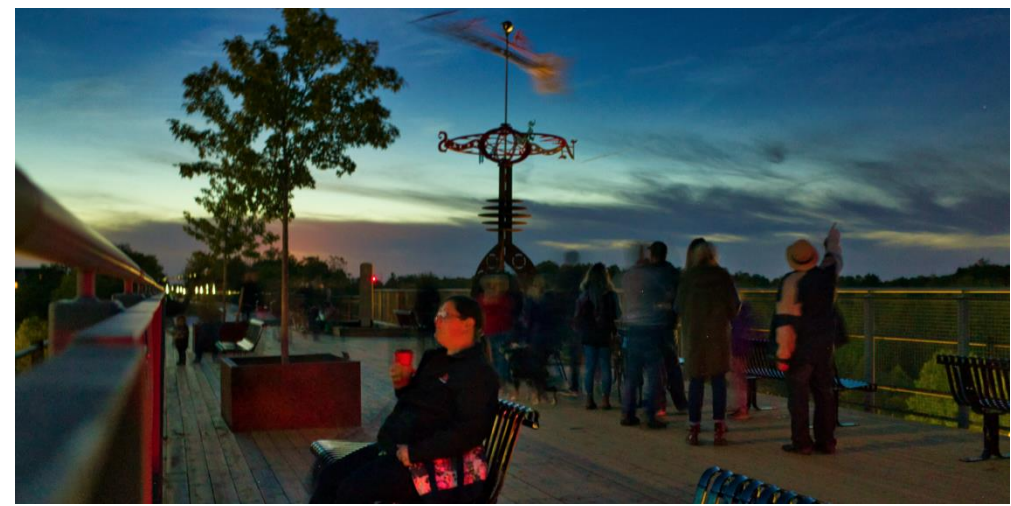
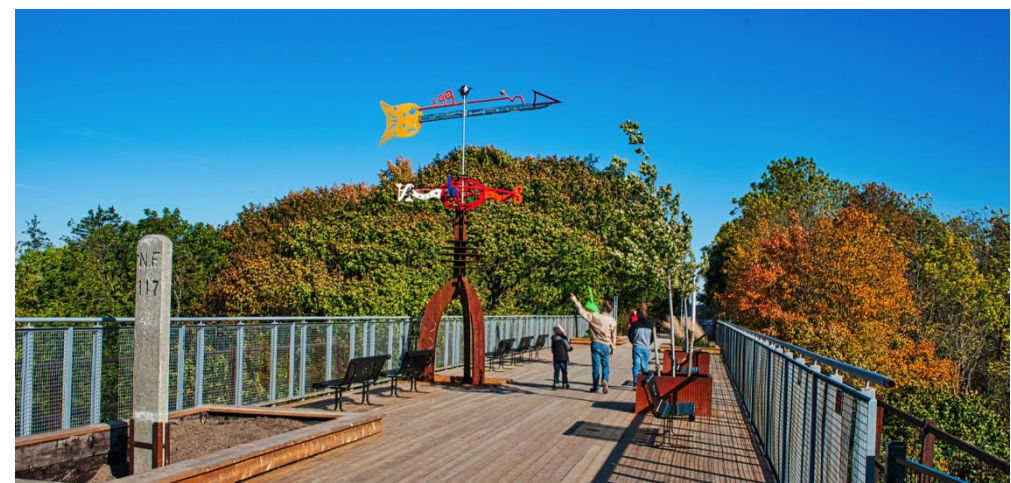
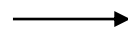
\$2.2 billion in new economic activity and **increased tax revenue by \$980-million**



NEW YORK CITY HIGHLINE



CANADA



ST. THOMAS ELEVATED PARK (ONTARIO)

St. Thomas Population: ~38,000

850 ft. elevated park on former Michigan Central Railway Bridge

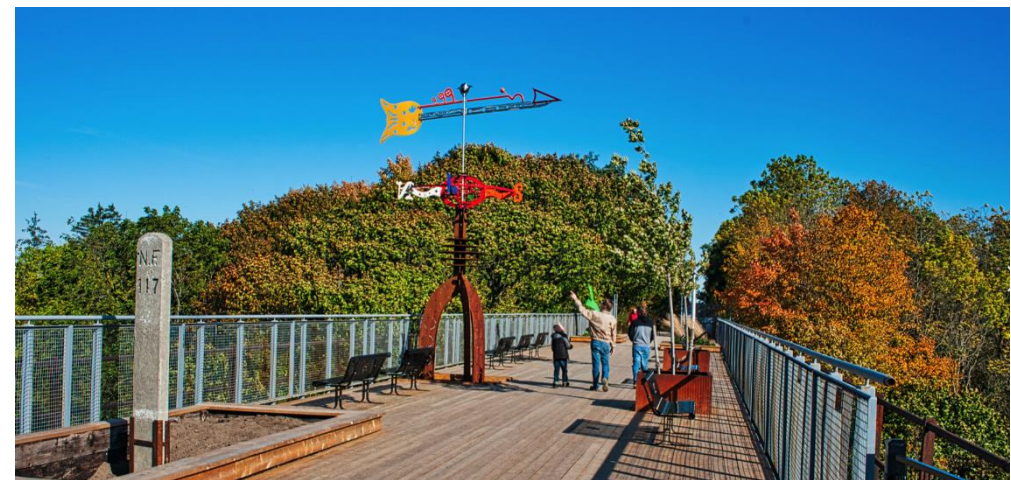
- Canada's first elevated park
- Connected to local trails
- Celebrates local rail history ("The Railway City")

Creating signature tourist attraction for region

- Park animated with art, performances, programming

Park privately owned by not-for-profit

Built with community donations and volunteer efforts (no tax dollars)



NEW YORK CITY GREENWAY HUDSON RIVER PARK

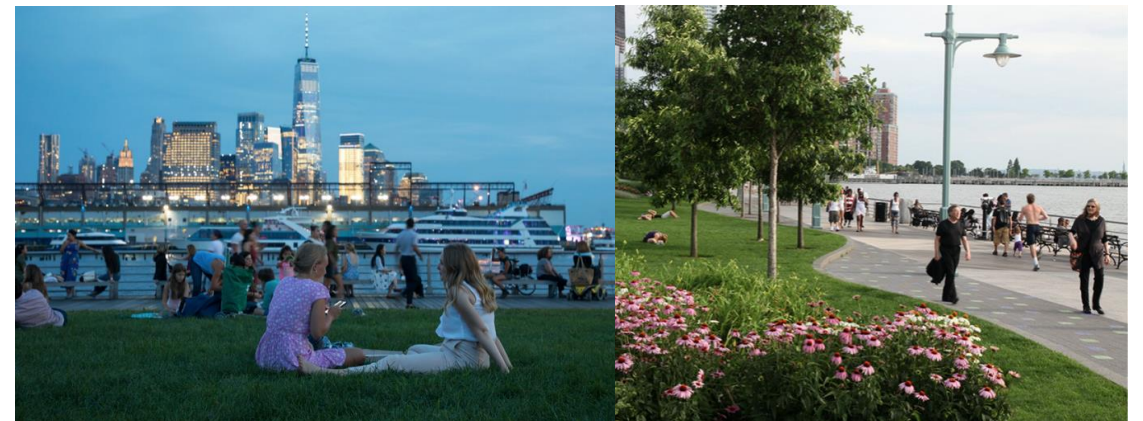
Revitalization of Hudson River Park – underused cargo and shipping piers into new public park and greenway/trail system

- New waterfront space for recreation – ADAPTIVE reuse
- Transportation corridor including bicycle share stations (biking, walking)

Waterfront piers – recreation spaces, commercial properties, food vendors, performance spaces, gardens

Operated by Hudson River Park Trust – financially self-sufficient model

- Rents from commercial tenants, concessions revenues, grants and donations
- Healthy community asset and economic generator



ELGIN - ST. THOMAS ACTIVE TRAIL SYSTEM

Community partnerships and collaboration with developers

- Connections with new trails and sidewalks, especially in new developments
- Improved trail network
- Cycling Master Plan (cycling tourism)
- County-wide trail strategy to attract new residents to Elgin County by highlighting rural landscapes, waterfronts, and recreation



VULNERABLE POPULATIONS TO CONSIDER

- Seniors and the **aging population**
- **People with different abilities**

Considerations include:

- Designing for **Winter Cities** – including snow and snow melt considerations in planning (e.g. heated sidewalks, sidewalk railings, limiting puddles at curb cuts and crossings, etc.) to promote universal accessibility
- **Public realm quality** – Cracked sidewalks, potholes, low quality foot paths, and poor weather-related maintenance are barriers for older adults and those with mobility
- Poor management of **sidewalks** can make residents feel not valued by their municipality, and also impacts health through falling hazards and fears of falling impeding healthy living (Jackson, Evans, Raine & Lee, 2020)



HEALTHIER AFFORDABLE HOUSING

Low-income neighbourhoods:

- Generally less supportive of maintaining good health
- Barriers to healthy food access and physical activity

Feasible opportunities to integrate **low-cost/cost-neutral elements** into **affordable/mixed-income housing** projects to support health

- Shifting costs from **sedentary to active design elements**
- Locating in more **walkable, mixed-use and complete communities**
- Co-locating **needed healthy amenities for residents and community** on-site (e.g. small park with playground and outdoor fitness equipment; farmers market or ground floor produce store)
- Encouraging mixed-income development with affordable and market rate units


<https://www.drkarenlee.com/resources/usa>



HEALTHIER AFFORDABLE HOUSING



**Burn Calories,
Not Electricity**



Take the Stairs!
Walking up the stairs just 2 minutes a day helps prevent weight gain. It also helps the environment.

Learn more at www.nyc.gov or call 311.



HEALTHIER AFFORDABLE HOUSING



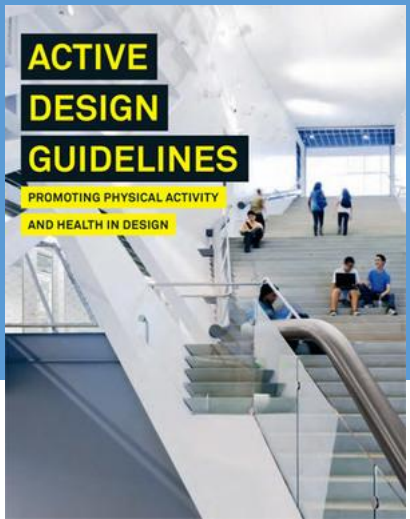
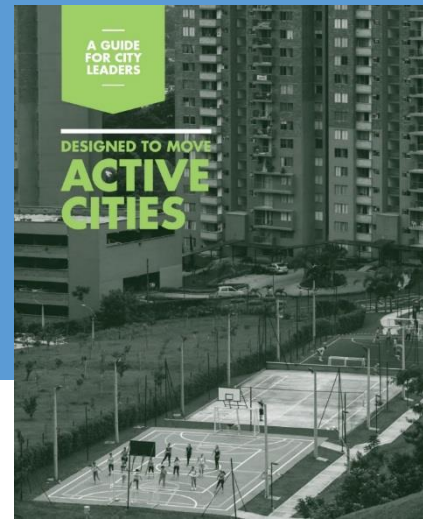
2014

AFFORDABLE HOUSING ACTIVE DESIGN
Guidelines and Standards



<https://www.drkarenlee.com/resources/peel>

POLICIES FOR HEALTHIER COMMUNITIES TODAY



- Adopting Guidelines for Healthier Developments & Buildings:

- Active Design Guidelines and Supplements
- Green Building Certification System Credits – E.g. LEED Design for Active Occupants Credit; Urban Agriculture Innovation Credit; Sustainable Site Active Transportation Credits; LEED for Neighborhood Development health-promoting points; Enterprise Green Communities Criteria
- WELL Building and Community Standards
- Healthy Rural Communities Tool Kit
- HEALTHY COMMUNITY GUIDELINES (anticipated 2021)



- Administrative Policy – all Municipal design and construction projects use above guidelines for promoting healthy living (esp. physical activity, healthier diets and social connections)

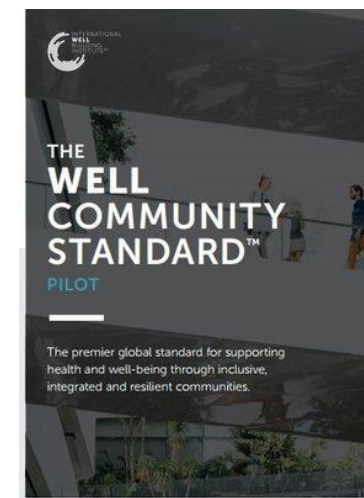
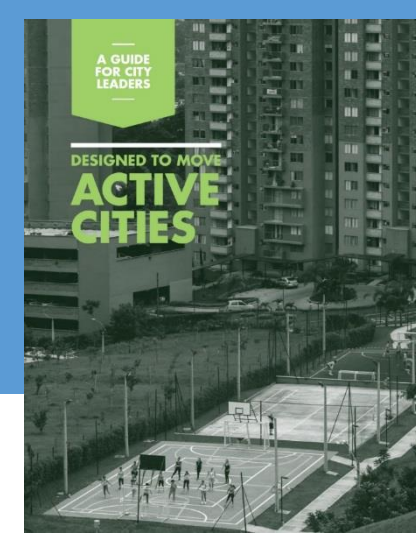
<https://www.drkarenlee.com/resources/usa>, <https://www.drkarenlee.com/projects/>;
<https://www.drkarenlee.com/resources/who-citiesforhealth>





POLICIES FOR HEALTHIER COMMUNITIES TODAY

- **Integrating Health and Wellbeing into Master Plans**
 - PLANYC 2030
 - Philadelphia 2035
 - City of Vancouver – Healthy City Strategy
 - City of Edmonton – new CITY PLAN has Healthy City as a Key Strategy/Pillar
- **Reviews of all New Developments and Major Renovations for Designs Promoting Physical Activity, Social Connection, and Healthy Food and Beverage Access; Healthier Buildings**
 - Active Design Guidelines
 - Active Design: Affordable Designs for Affordable Housing
 - Active Design Supplement: Promoting Safety
 - Active Design Supplement: Shaping the Sidewalk Experience
 - And HEALTHY COMMUNITY GUIDELINES (anticipated 2021)



<https://www.drkarenlee.com/resources/usa>, <https://www.drkarenlee.com/projects/>;
<https://www.drkarenlee.com/resources/who-citiesforhealth>

SUCCESSSES from

COMPREHESIVE POLICY & ENVIRONMENTAL APPROACHES TO HEALTH & NCDs

Health-related Outcomes in New York include (in <1 decade):

- Childhood obesity trends reversed (Philadelphia and San Diego also)
- Bicycle travel increased 126% (while traffic fatalities decreased ~30%)
- Transit ridership into CBD increased 11.3%
- Air pollution levels decreased at pedestrian plazas
- “No Physical Activity in Last 30 Days” showed significant decline after no change in previous decade
- Life expectancy 2.2 years longer and increasing faster than the rest of the U.S.

Positive Economic Outcomes also:

- Retail sales increased, and retail vacancies decreased, around pedestrian plazas & bike lanes
- Job creation from Supermarket Development in impoverished neighborhoods

Processes and lessons learned captured in peer review publications and *Fit Cities* book.

Columbia University (NYC) – *Designing Healthy Cities* (2day course, Jun 2021)

HEALTHY COMMUNITY GUIDELINES in Canada

- **Guided reference for planning and building** communities through **health and wellbeing lens**
- Informed by leading national and global policies and guidelines, and research studies
- Guidelines for: **planning, development, design, construction, maintenance, renovation, retrofit, consultation and reviews**
- To create communities that are **safe, vibrant and healthy** for residents in Alberta and Canada
- **Healthy Community Guidelines Subcommittee** (~100 partners including municipalities, provincial ministries, private sector, community organizations in AB, BC, SK, MB, ON)
 - Interested in joining? Reach out to HforH@ualberta.ca
- Part of the Housing for Health Project at University of Alberta

HOUSING FOR HEALTH at University of Alberta

1) Partnership Working Group (and Subcommittees)

- >150 partners in Canada from health, planning, development, design, community and academic sectors

2) Pilot Developments

- 2 sites: Edmonton (pop. ~1 million; infill) and Whitecourt (pop. ~10,000; greenfield), AB

3) Community Engagement

- Partnering with community residents on creating healthier environments to increase political support and industry demand

4) Research and Evaluation

- Evaluating health impacts

5) Knowledge Sharing and Dissemination

- **1ST ANNUAL FIT CITIES FIT TOWNS CANADA CONFERENCE FEBRUARY 24, 2021 (virtual)**

Contact HforH@ualberta.ca

ADDITIONAL RESOURCES FOR THOSE INTERESTED IN LEARNING MORE

1. www.drkarenlee.com/resources
2. For more ideas and the stories behind them,

FIT CITIES is now available in Bookstores or Online.
3. Columbia University Mailman School of Public Health (NYC) – *Designing Healthy Cities* Course (June 2021)
4. University of Alberta - Faculty of Extension *Creating Healthier Communities Continuing Education Course* (EXLUP 4109, 2d dates TBD) and future webinars

ACKNOWLEDGEMENTS

Salimah Valiani, MPH, Community Engagement Coordinator, Housing for Health, University of Alberta

Dr. Mila Luchak, MD, MPH, CCFP, R5 Public Health & Preventive Medicine Resident, University of Alberta

Dana Gusse, Executive Assistant, Housing for Health, University of Alberta

**The Housing for Health project has been made possible in part through funding from the Public Health Agency of Canada
(Disclaimer: The views expressed herein do not necessarily represent the view of the Public Health Agency of Canada)**

Thank you for joining us!

Contact:

kkl1@ualberta.ca
www.drkarenlee.com

