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UniverCity

ON BURNABY MOUNTAIN

Shifting Gears: How to Manage Cities in the Energy Climate Era

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Communities Conference

October 4th, 2010

Presentation Overview

- Setting the context for adaptation and change
- Challenges facing Canadian cities
- 5 principles for a new toolkit

Part 1:

SETTING THE CONTEXT FOR ADAPTATION AND CHANGE

"World Cities" 1900



Chicago

New York

London

Paris

Berlin

- | BERLIN |
- | CHICAGO |
- | LONDON |
- | NEW YORK |
- | PARIS |

Cities over 1 million inhabitants in **1900**

"World Cities" 2010



| BANGKOK | BEIJING | BUENOS AIRES | CAIRO | CALCUTTA | DELHI | DHAKA |
| ISTANBUL | JAKARTA | KARACHI | LAGOS | LONDON | LOS ANGELES | MANILA |
| MEXICO CITY | MOSCOW | MUMBAI | NEW YORK CITY | OSAKA | RIO DE JANEIRO |
| SAO PAULO | SEOUL | SHANGHAI | SHENZHEN | TEHRAN |
| TIANJIIN | TOKYO |

Cities over 10 million inhabitants in **2010**

United Nations Forecasts “Urban Century”

- *World Conference on Metropolitan
Governance,
Tokyo, Japan, 20-23 April 1993.*

70%

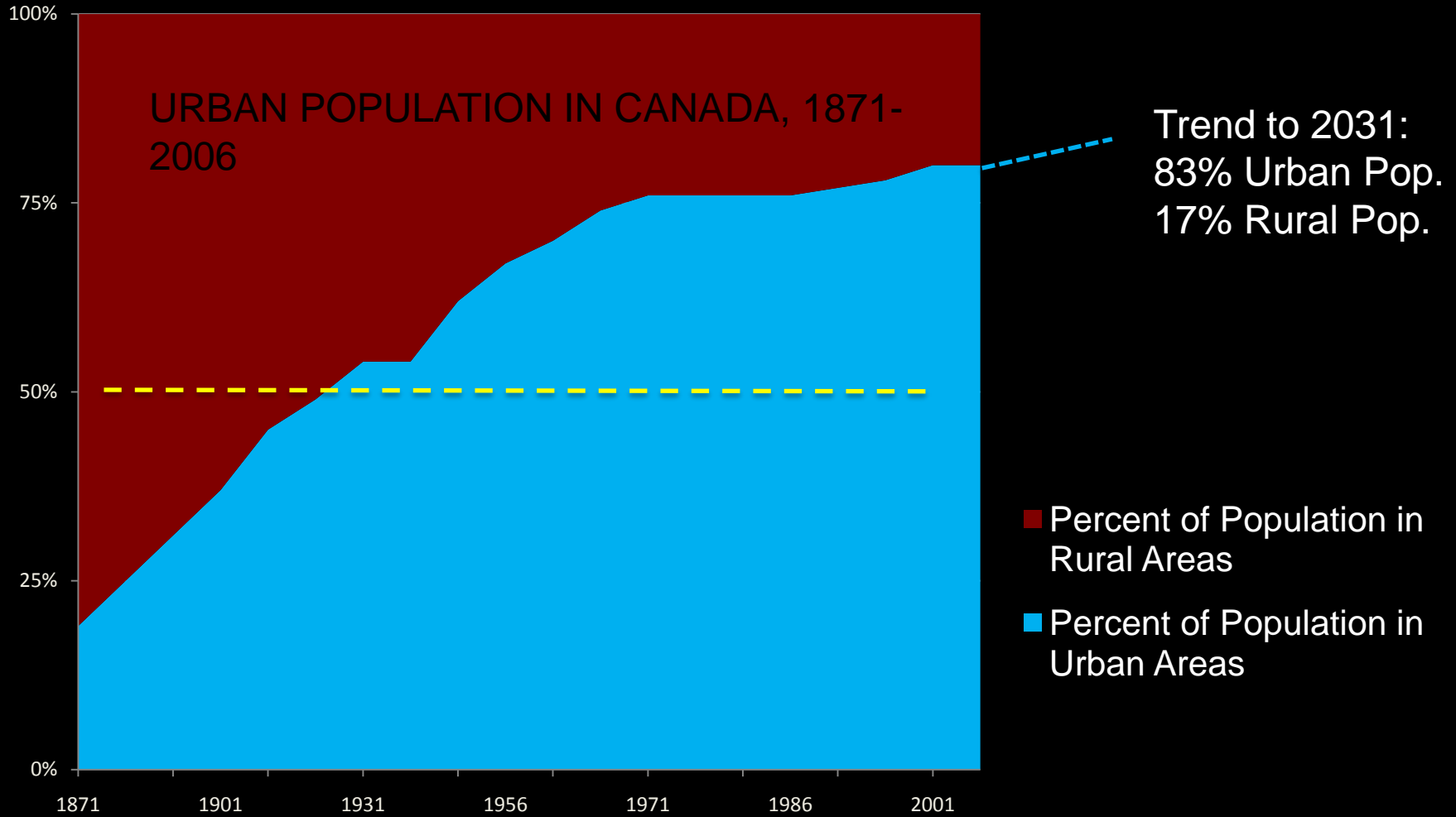
Amount of World's Population
Living in Urban Areas in
2050

1. Setting The Context For Adaptation & Change



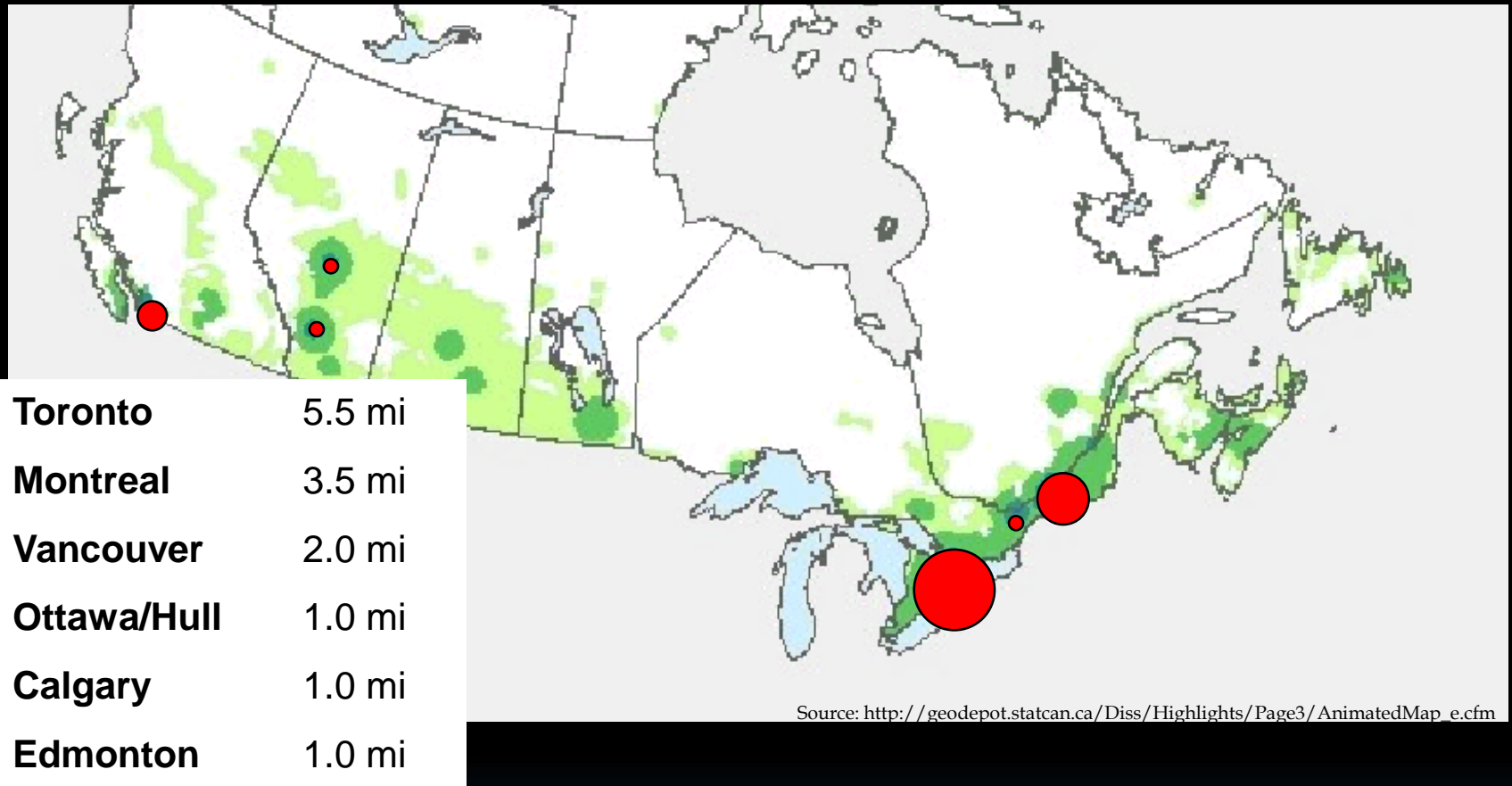
- Rapid rates of urbanization
- Climate Change, Coastal Flooding
- Water and food shortages
- Economic polarization

Canada Becomes an Urban Nation



Source: Statistics Canada

Large Urban Agglomerations in Canada



6,000,000

Growth in the Canadian
Population by 2050

PART 2:

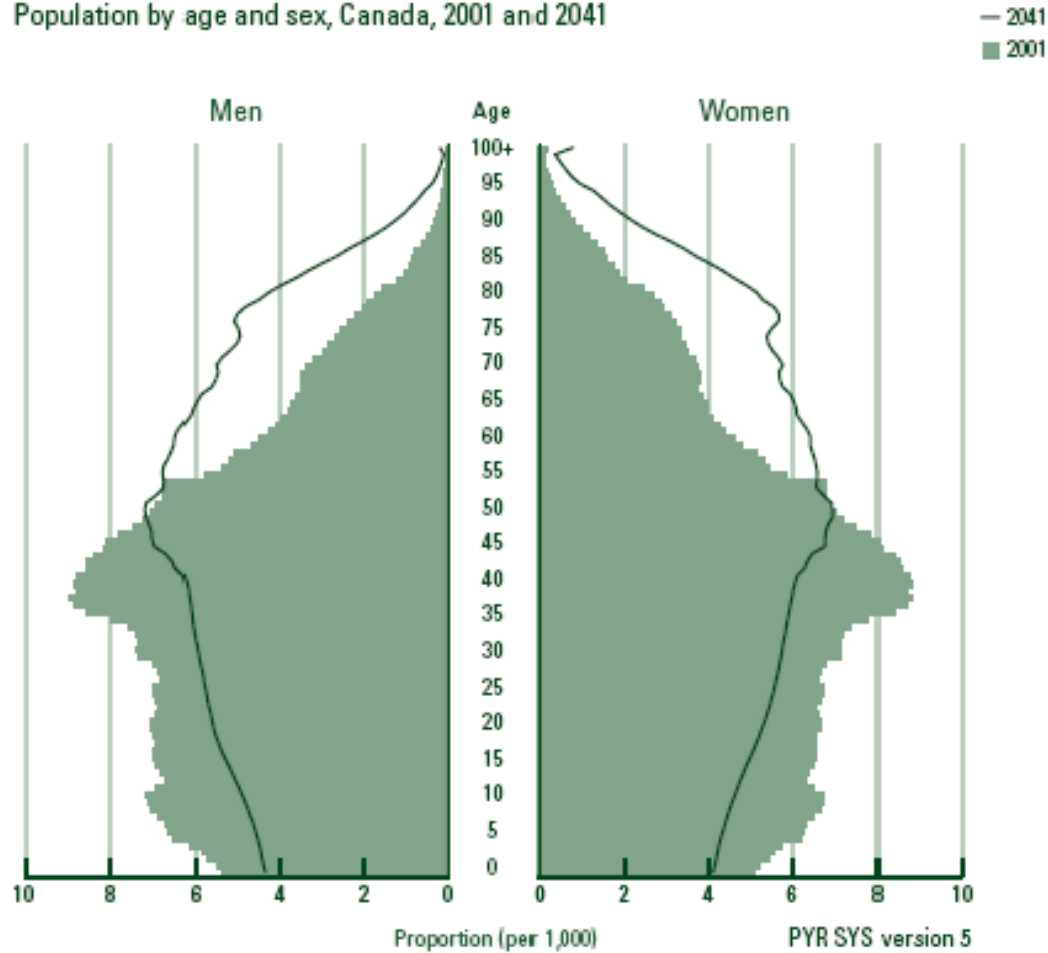
WHAT ARE CANADA'S BIGGEST CHALLENGES?

A. Demographic change

27%

The Percentage of
Canadians 65+ in 2050

Population by age and sex, Canada, 2001 and 2041



**Fertility declining
and life expectancy
increasing...**

Source: "Canada's Aging Population" by Health Canada and the Interdepartmental Committee on Aging and Seniors Issues, 2002

5:1 to 2:1

The Drop In The
Dependency Ratio

5:1



2:1

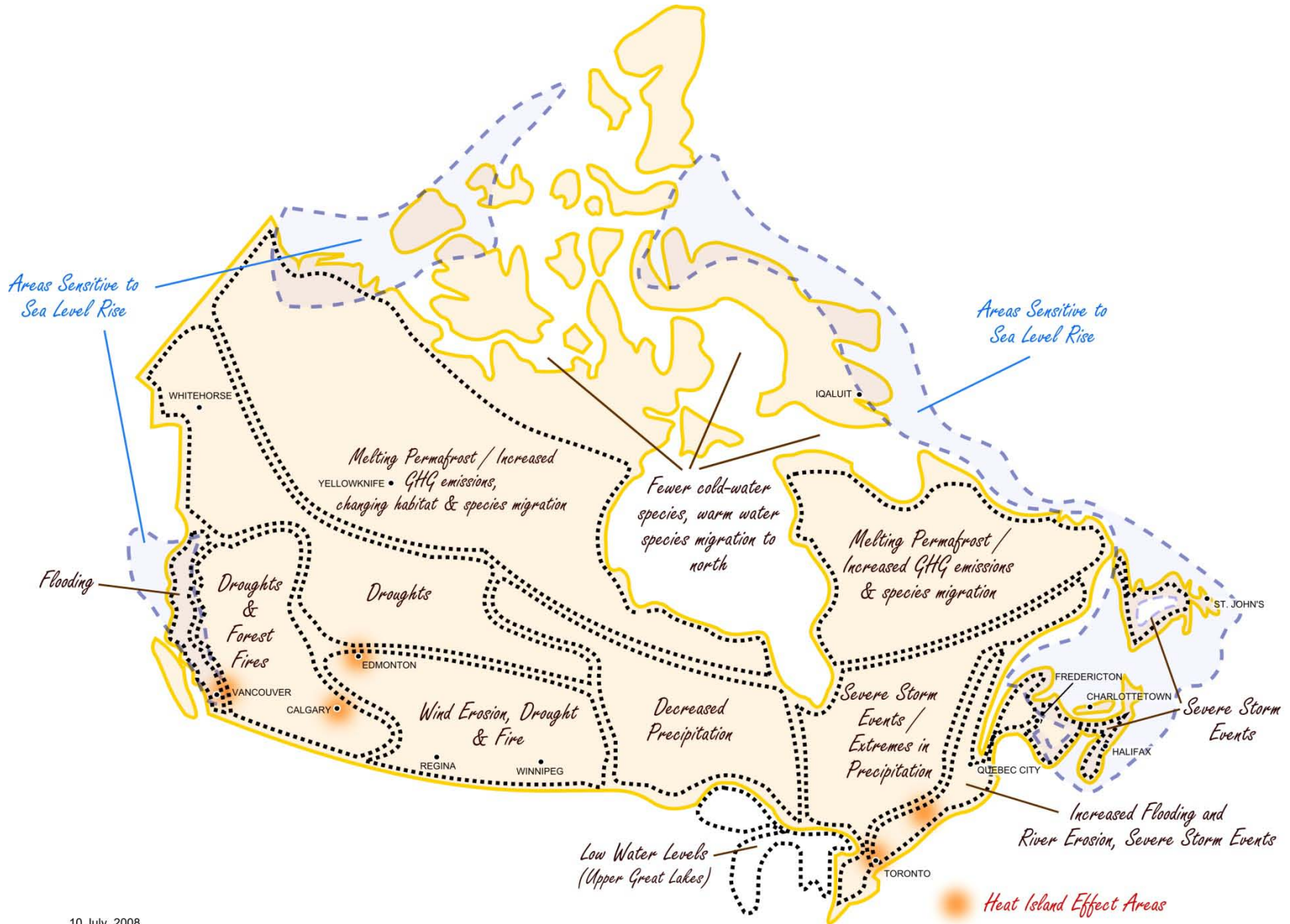


B. Economic challenges

- Replace aging infrastructure
- Build new, smarter infrastructure
- Re-invent the economy

C. Environmental challenges

- The impact of climate change will be felt differently across the country
- Some regions face a different climate conditions requiring reinvestment in infrastructure
- Some regions will have to re-invent their economies



10 July, 2008

7/5/2008

Part 3:

CREATING A NEW TOOLKIT

What needs to be done?

- Intervene at various scales
- Offer new models and methods of investment
- Manage as if constrained
- Address societal disparities
- Effectively engage the public

CREATING A NEW TOOLKIT

INTERVENE AT VARIOUS SCALES

- Integrated approach to policy making that uses government's statutory authority as a driver for positive change
- Natural boundaries that focus on function can replace reliance on traditional administrative municipal boundaries
- Examples include watersheds, airsheds, commutersheds

Greenhouse Gas Emission Targets

- BC's Bill 44 sets provincial greenhouse gas emission reduction targets for the entire provincial economy of
 - 33% reduction from 2007 by 2020
 - 80% reduction from 2007 by 2050
- It goes further to require public sector agencies to be carbon neutral starting in 2010, either through operation or offset

Neighbourhood Energy



- Providing energy at the neighbourhood or district scale can generate significant efficiencies
- But more importantly, it offers a level of flexibility in energy production that allows urban areas to respond quickly to changing technologies in the future

CREATING A TOOLKIT

OFFER NEW METHODS AND MODELS OF INVESTMENT

Leveraging Existing Funds

- Urban regions could see more of what they want by reexamining where they spend their existing funds



- For example, the proposed gondola project at SFU would improve service and save an estimated \$177 million over 30 years by reinvesting money that is already being spent on bus service

There is No Green Premium

- Green buildings are not expensive and have significant capital and operational efficiencies that make these projects not just viable but preferable



- UniverCity is developing a new childcare facility that will be Canada's greenest building for between \$100 and \$150 less than other conventional centres built elsewhere in the Vancouver region

Waste Into Fuel



- District energy systems are great examples of this in practice
 - Vancouver’s Olympic Village generates heat from the sewage generated by its residents
 - The district energy system at UniverCity is looking at the potential to capture waste heat from a nearby SFU data centre

CREATING A NEW TOOLKIT

MANAGE AS IF CONSTRAINED

Build on the Experience of Others

- Learn from jurisdictions that are operating successfully within physical constraints
- Apply lessons in intensification, operating, investment strategies more broadly

Green Belts and Urban Containment



- Containing urban areas is a multi-faceted issue that can't be successfully addressed at the local or regional scale
- Successes such as Vancouver's ALR, Toronto's Green Belt, and Portland's UCB all required the participation of several levels of government including at the provincial/state level

An Adaptive Management Approach to Stormwater



- As mountaintop community, stormwater management at UniverCity is vital as run-off impacts two municipalities, federally-regulated waterways, several salmon-bearing streams, and local communities
- Therefore, UniverCity's system is monitored and improved on an on-going basis by a committee made up of representatives from the City of Burnaby, the BC Ministry of the Environment, the federal Department of Fisheries and Oceans, and local stream keepers groups

Green Buildings

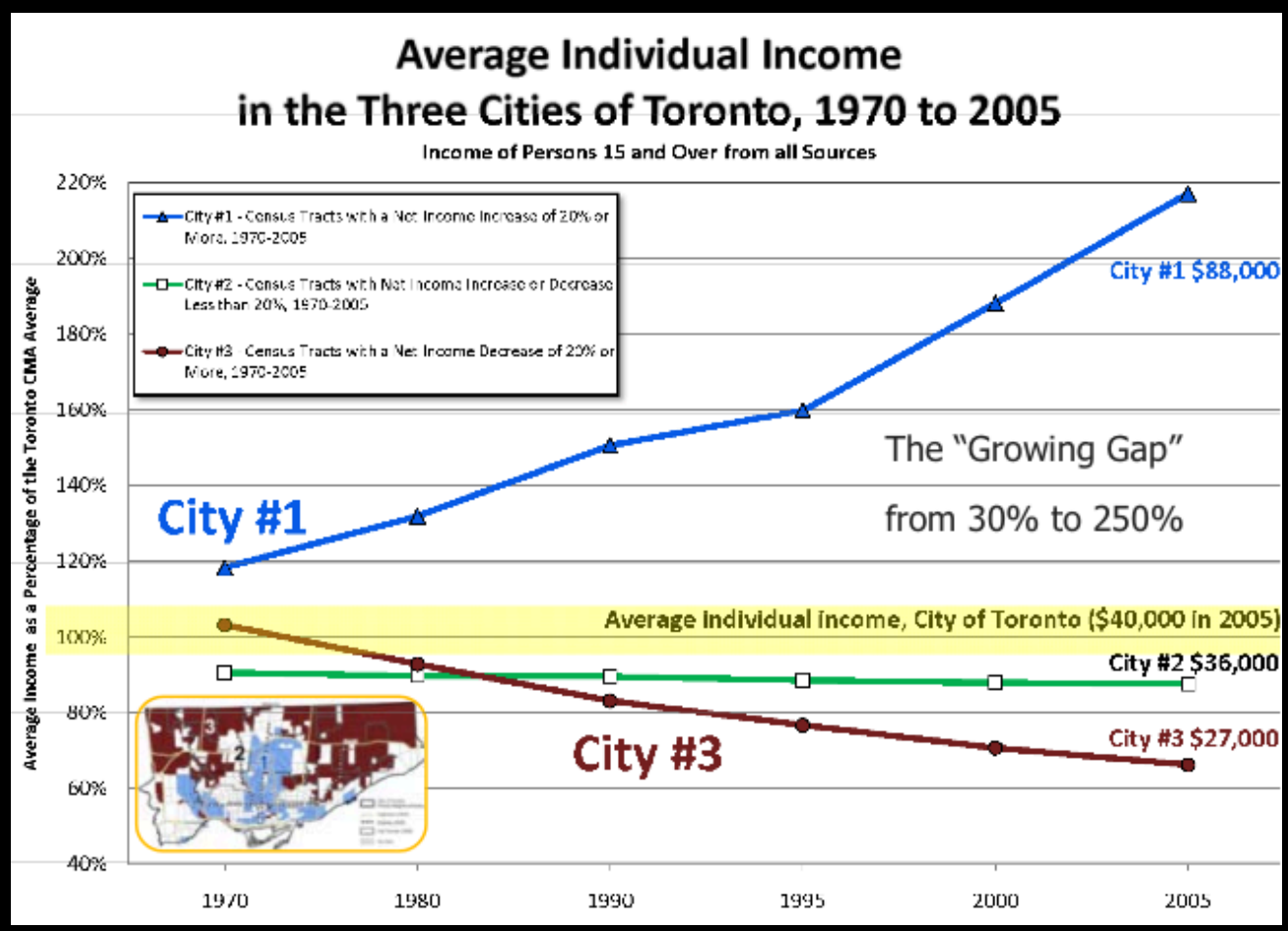


- Regulations that mandate green buildings in Vancouver and at UniverCity have been very successful in seeing development move forward that is significantly more efficient than traditional development
- But care needs to be gathered input from builders and developers to ensure that green building goals are achievable in the marketplace

CREATING A NEW TOOLKIT

ADDRESS SOCIETAL DISPARITIES

Toronto Divided



- As our population ages, quality of place will become increasingly important
- Large parts of our urban areas are not amenable to large groups of people such the old and disabled
- Our neighbourhoods should designed and retrofit to make them accessible to all residents

Affordable Housing



- Affordability will be a central issue in cities as we go forward
- Rental housing has in the past been the way to provide affordable options in our cities and will need to be encouraged in the future
- Other models such as a shared equity approach also have some potential to address housing costs

CREATING A NEW TOOLKIT

EFFECTIVELY ENGAGE THE PUBLIC

SHIFTING GEARS

4. CONCLUSIONS



Thank You.