

Lessons from Early Adopters

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Decision-Makers Workshop:

Adapting to Climate Change in Toronto

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Research Process

- Investigated cities/urban regions that appeared to have begun broad adaptation planning
- Identified initial group of candidates
- Collected & reviewed reports & related background materials
- Visited 6 cities to interview participants in adaptation planning & processes

Status of Research

- Report writing in process
- Anticipated completion in July

Cities and Adaptation

- Many cities/urban regions have mitigation strategies
- Much smaller number have more recently begun adaptation planning
- Some existing programs contribute to adaptation, though developed for other reasons

Cities/Regions Investigated

- London (UK)
- New York
- Boston
- Halifax
- Vancouver
- Seattle

London

- London Climate Change Partnership formed in 2002 “to ensure that London is prepared for its changing climate”
- London’s Climate Change Agency – responsible for coordinating mitigation efforts – launched in 2006

LCCP Goals

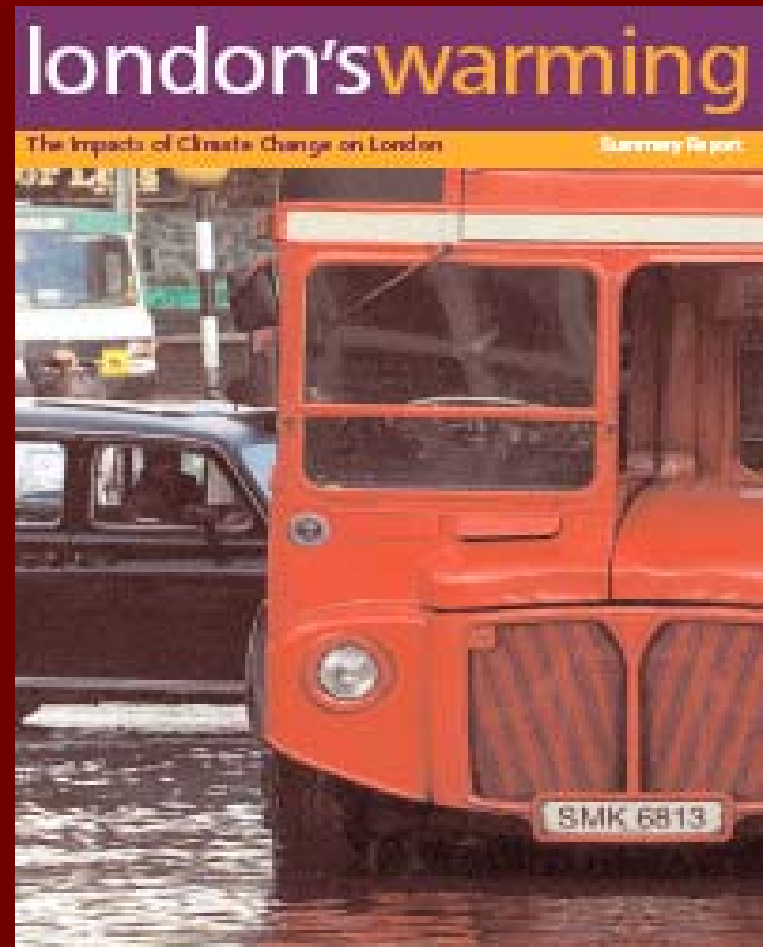
- Collect & disseminate high quality info on:
 - Expected climate change
 - Impacts on London
 - Adaptation options
- Help stakeholders build climate change into decision-making and practices
- Engage the media
- Monitor London's preparedness

How it Works

- Headed by high-profile former businessman
- Full-time staff
- 20 member organizations from government, private and voluntary sectors
- Steering group meets every 2 months
- Subgroups on transport, buildings, finance, Olympics, the London Plan, etc.

LCCP Publications

- *London's Warming: the impact of climate change on London* (2002)
- *The Impact of Climate Change on London's Transport Systems* (2005)
- *Adapting to Climate Change: A Checklist for Development* (2005)



LCCP Policy Interventions

- Insert climate adaptation considerations into national & local policy discussions by public comments on:
 - UK Sustainable Development Strategy (2004)
 - Regional Spatial Strategies (2004)
 - Flood & Coastal Erosion Management (2005)
 - Code for Sustainable Homes (2006)
 - London Plan (current)
 - Olympic Games (London 2012)

Supported by UKCIP

- National climate change impacts agency with 15 staff
- Works with stakeholders & coordinates research on regional climate change impacts
- Produces downscaled climate projections
- Advises regions on impacts assessment
- Helps local authorities develop adaptation strategies

UKCIP Publications

- Many useful publications for local governments, including:
 - *Keeping UK Buildings Cool in a Warming Climate*
 - *Working Today for Nature Tomorrow*
 - *Climate Change and the Visitor Economy*
 - *Climate Change and the Historic Environment*
 - *Socio-economic Scenarios for Climate Change*

New York

- Started with National Assessment of Climate Variability & Change
 - 18 regional assessments
 - Started 1998
- Metropolitan East Coast Assessment
 - For the New York Metropolitan Region

MEC Assessment

- Started with a 2-day workshop engaging:
 - Regional stakeholders
 - Government staff
 - Academic researchers
 - NGOs & members of the public
- Purpose:
 - Develop network of stakeholders
 - Assess vulnerabilities & opportunities
 - Recommend future steps

Working Groups

- Coasts
- Infrastructure
- Wetlands
- Water supply
- Public health
- Energy demand
- Institutional decision-making

Each Group Investigated

- Current conditions & stresses in the sector
- Lessons from past climate variability
- Likely impacts of future climate
- Knowledge gaps
- Critical issues (e.g. vulnerable areas, infrastructure & populations)
- Identification of adaptation strategies

Process

- Monthly meetings
- In the offices of stakeholders
- Identifying
 - Activities relevant to climate change
 - Time-frame for decisions
 - Whether CC taken into account in decision-making
 - Information available & needed
- Sector Report

Involvement of Stakeholders

- Strengthened research process
- Helped identify impacts that cut across sectors
- Built regional interagency networks around climate issues
- Led to ongoing adaptation work in NY City, after the assessment was completed (2000)

After MEC Report

- National funding ended
- Researchers continued to work on adaptation
- Engagement of stakeholders ebbed
- But ideas continued to percolate
- In 2004 Commissioner of Department of Environmental Protection contracted Columbia researchers to further explore adaptation of the water system

New York City Department of Environmental Protection

- Main responsibility the water system
- Drinking water for 9 million
- 6000+ employees
- Includes:
 - Water supply
 - Water distribution
 - Sewer operations
 - Wastewater treatment, etc.



Vulnerabilities

- Heat-related rise in water demand
- Reduced flows from
 - Increased evaporation
 - Decreased precipitation and droughts
- Intense rainfalls causing floods upstream of the reservoirs
- Storm damage to water/sewage infrastructure
- Sea level rise blocking sewer outflows

Process

- Task Force involves 25-30 appointees (15 active) from all NYCDEP sectors
- Columbia scientists
- Project Manager within NYCDEP
- Program Director at Columbia
- Meet monthly
- Developing guidelines for incorporating climate change into decision-making

Internal Workshops

- “In-reach”
- Organized for each of 7 bureaus
- 100 staff participated
- NASA scientists presented climate data
- Discussion of impacts and adaptation strategies
- Emphasis on “no-regrets” options

The Goal

“This the heart of the DEP process, not to impose adaptation but to build it into the structure of decision-making in the agency, so the engineers ask: ‘What will climate be like? How do we adjust for this?’”

Kate Demong, NYDEP Project Manager

What's Next

- Guidelines for including climate in water system decisions to be released soon
- Outreach to other sectors through Mayor's Office of Environmental Coordination
 - Transport
 - City planning
 - Waterfront development
 - Other counties & states

Adaptation Strategies Discussed



- Modify dam infrastructure to allow for water releases in anticipation of storm event

Adaptation Strategies Continued

- Inventory existing tide gates
- Identify locations more vulnerable to sea level rise and storm surges
- Support long-term maintenance
- Study future installation programs



Adaptation Strategies Continued



- Construct flood walls in response to sea level rise and associated storm surges

Halifax

- Adaptation efforts began 2001
- Halifax area consultant working on climate change issues in the Caribbean
- Thought Halifax a “natural” for piloting adaptation projects
- Talked to other environmental consultants about creating a consortium
- Looked to build opportunities on the business side

ClimAdapt

- Formed ClimAdapt, a consortium of 7 private sector consulting companies
- Developed ideas for series of climate “toolkits”



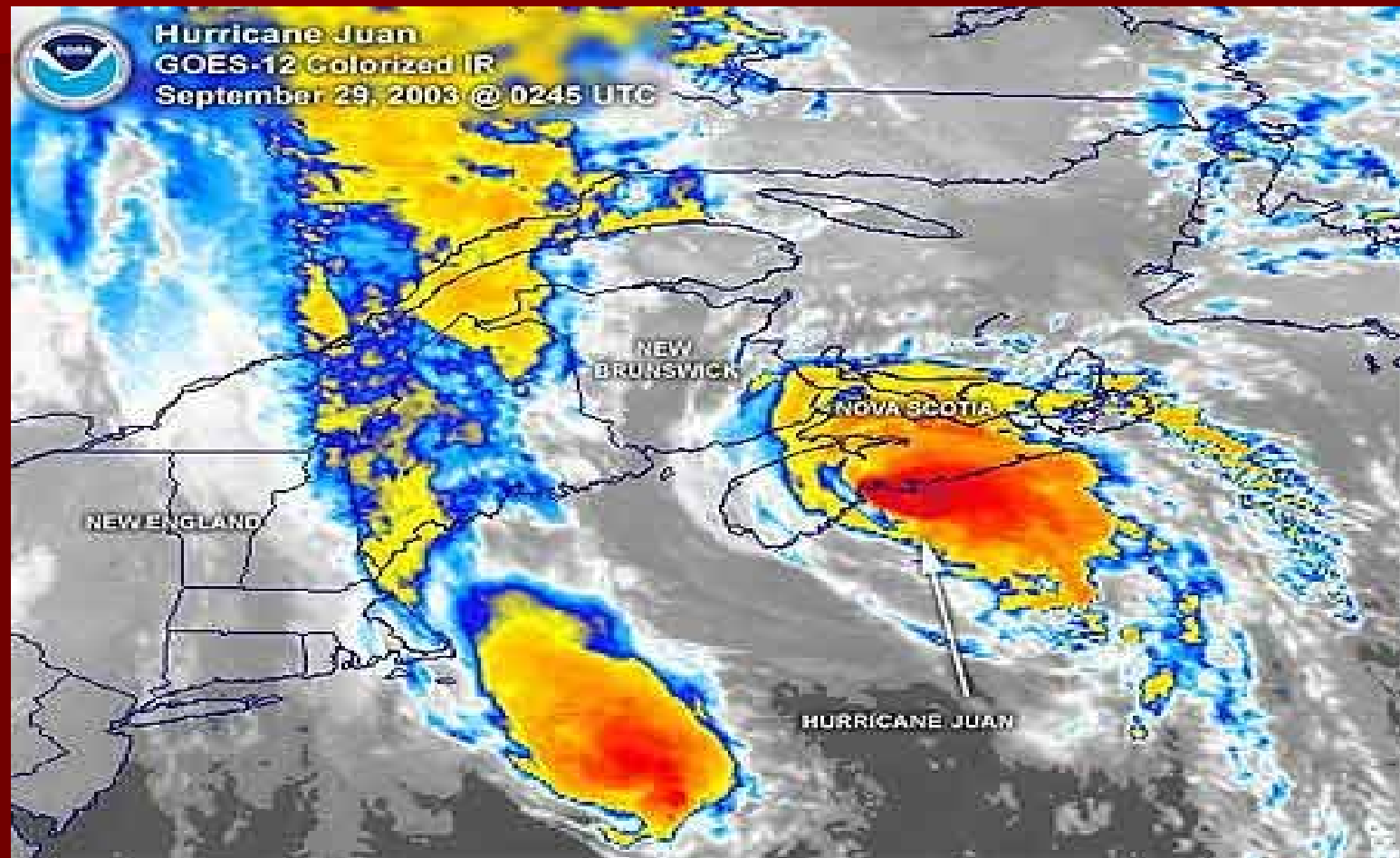
Toolkits

- To help municipalities integrate mitigation and adaptation into decision making
- Pilot in Halifax
- Replicate for other municipalities

Collaboration with Halifax Regional Municipality

- Slow to get off the ground
- Resistance at senior levels “not used to consultants coming, money in hand, offering a project”
- Then ...

Hurricane Juan, September 2003













White Juan, February 2004







Climate SMART

- Steering committee included:
 - ClimAdapt Network
 - Halifax Regional Municipality
 - Environment Canada
 - Nova Scotia Dept of Energy
 - Nova Scotia Dept of Environment & Labour
- \$475,000 in funding from FCM, NRCAN, EC, and Nova Scotia

Issues Paper

- Identified expected climate impacts
- Prioritized impacts by the probability of occurrence and by impact severity
- Outlined “broad brush” adaptation responses
- Presented for discussion to workshop of HRM staff in November 2005

Response of Municipal Staff

- Agreed adaptation needs addressing
- Need resources
- Need technical help
- Engineers want numbers (uncomfortable with uncertainty)
- Concerns about jurisdiction

Current Status

- Several departments engaged
 - Planning incorporated some impacts issues in new regional plan
 - Water Commission investigating climate impacts on water supply
 - Parks (pest infestations, storm damage...)
- But not all ...

Current Status

- Five Councillors went to COP 11 in Montreal leading to a surge of political interest
- However discussion at Council postponed several times
- Discussion of broader organization to organize mitigation & adaptation at Atlantic Canada level

Toolkits and Guides

- Completed:
 - Incorporating climate change into EIAs
 - Climate-related land use planning guide
- Several others under development
 - See ClimAdapt web site

Lessons - Process

- Political or executive champions
- Leverage commitment to sustainability
- Allocation of financial & human resources
- Creation of a specific interagency oversight organization with staff
- Stakeholder engagement strategy
- Need for a long-term perspective

Lessons - Research

- Needs research
- Involvement of full-time researchers and scientists
- Inside information critical
- Regional climate projections
- Impact research
 - Overview
 - By sector, prioritizing areas of impact
- Needs to get specific and technical to be useful

Lessons – Priority Setting

- Identify areas of highest likely impact (disruption, cost, suffering)
- Or where opportunity presents
 - Where leadership exists
 - On major infrastructure renewal or planning projects
- Prioritize “no-regrets” actions
 - Based on previous climate experience
 - That serve multiple goals

Lessons - Obstacles

- Political short-term thinking
- Departmental silos
- Set ways of doing things
- Ad hoc resources