

Moving Toward Climate Resilience: collaboration in assessing & addressing climate impacts on health services

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fraserhealth

686,942 m²
OF USEABLE
FACILITY SPACE

153
DISTINCT
BUILDINGS

18,298
FULL-TIME STAFF



Vancouver CoastalHealth
Promoting wellness. Ensuring care.

690,374 m²
OF USEABLE
FACILITY SPACE

165
DISTINCT
BUILDINGS

14,568
FULL-TIME STAFF



Providence
HEALTH CARE
How you want to be treated.

177,159 m²
OF USEABLE
FACILITY SPACE

36
DISTINCT
BUILDINGS

4,760
FULL-TIME STAFF



Provincial Health Services Authority
Province-wide solutions. Better health.

358,995 m²
OF USEABLE
FACILITY SPACE

76
DISTINCT
BUILDINGS

8,814
FULL-TIME STAFF

Above: St. Paul's Hospital (Vancouver) concept design





GreenCare
2018
Environmental Performance
Accountability Report

Environmental sustainability is everyone's story.



fraserhealth
Better health. Best in health care.



Providence
HEALTH CARE
How you want to be treated.



Provincial Health
Services Authority
Province-wide solutions.
Better health.



**Vancouver
CoastalHealth**

Cascading Impacts

Critical systems

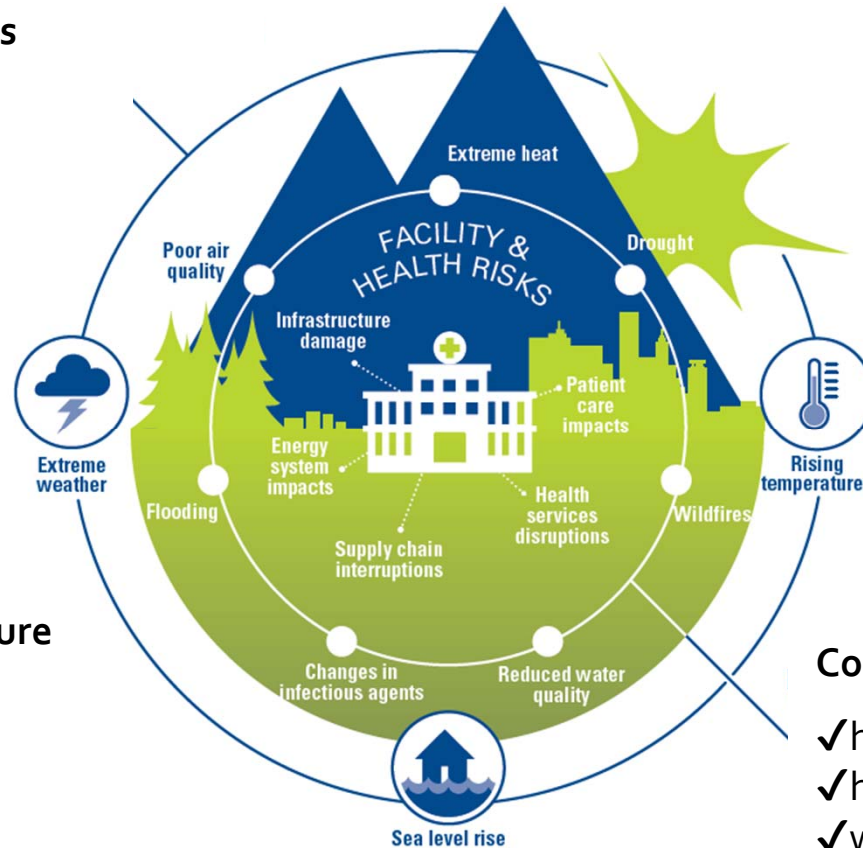
- ✓electricity
- ✓water, sewer
- ✓ventilation

Critical supplies

- ✓food & water
- ✓equipment

Critical infrastructure

- ✓road, rail, air, sea
- ✓electricity
- ✓water, sewer



Workforce

- ✓access
- ✓thermal comfort, productivity
- ✓occupational health & safety
- ✓sick, overtime, absent

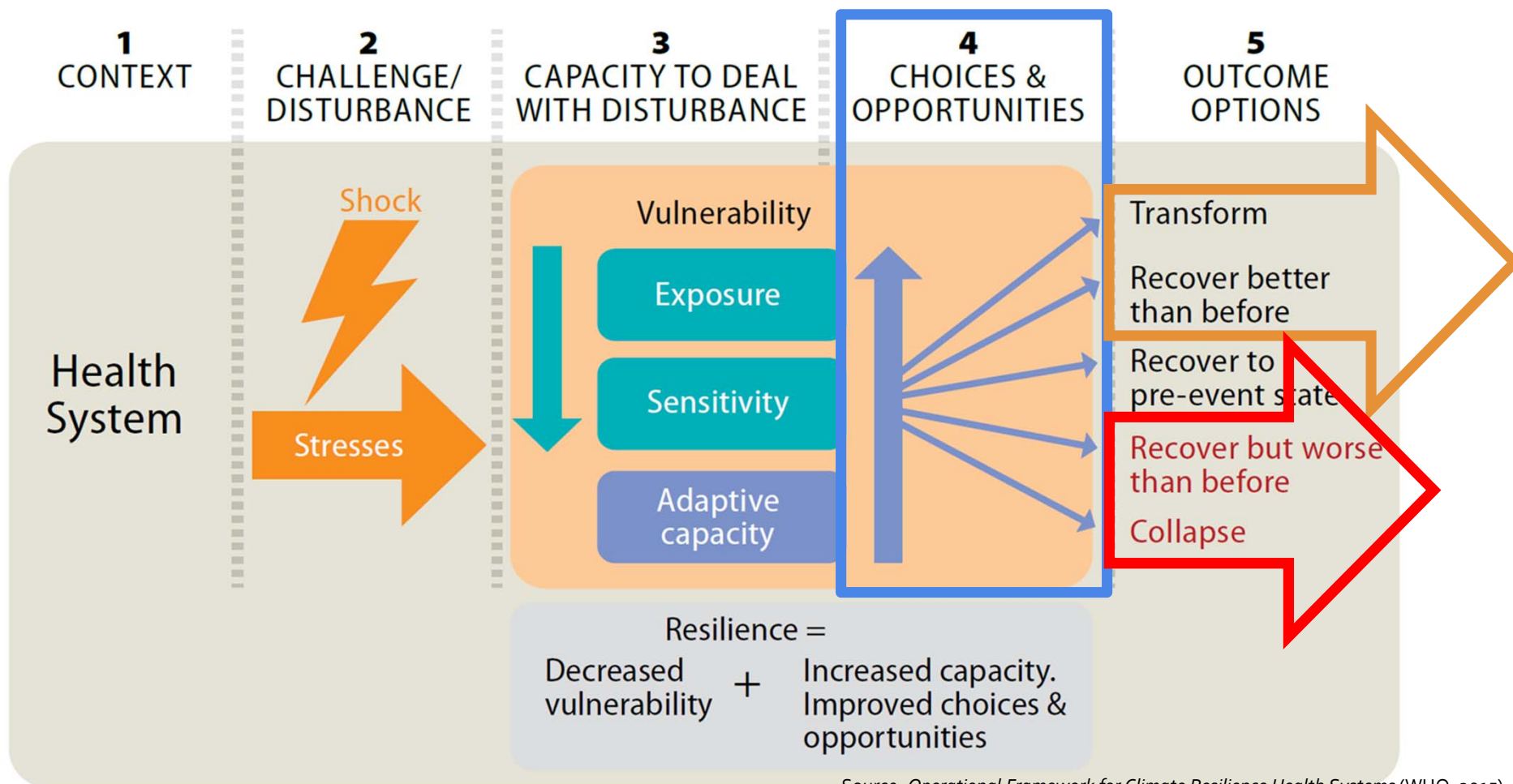
Patients

- ✓personal A/C & filtration
- ✓patient stays & readmissions
- ✓pharmaceuticals

Community

- ✓heat-related illnesses, conflict
- ✓heat & air quality advisories
- ✓water restrictions, drought
- ✓need for refuge & healthcare

Cascading Benefits



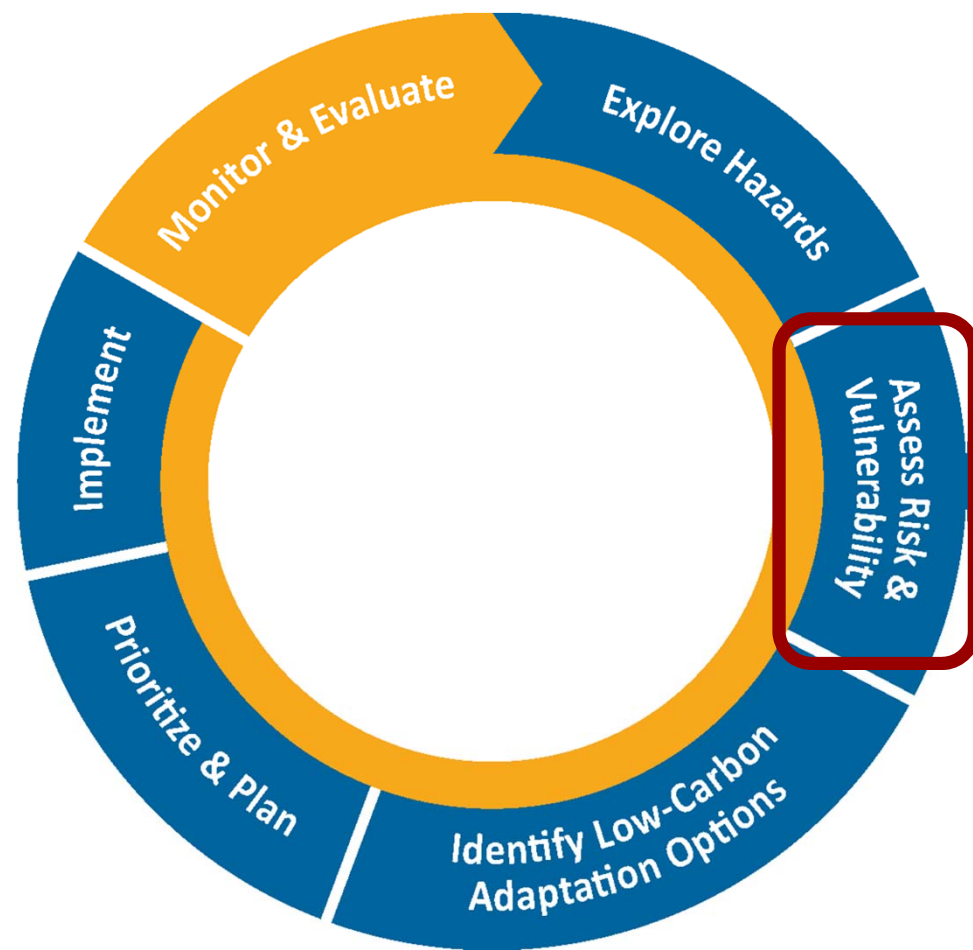
Source: Operational Framework for Climate Resilience Health Systems (WHO, 2015)

Principles

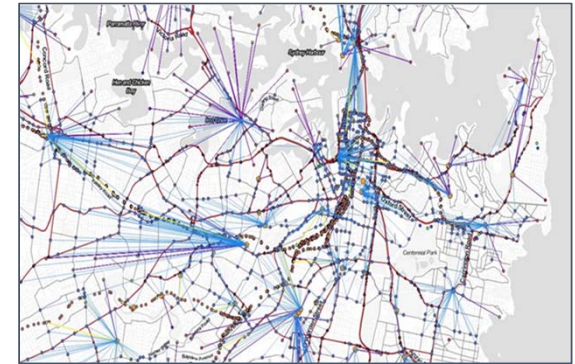
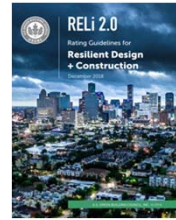
- Consider **multiple levels** or scales concurrently
- Anticipate interruptions and **change**
- Allow for **iteration** and continuous improvement
- Emphasize “**no-regret**” options
- Prioritize **simple, flexible & durable** design
- Cultivate **synergies** between options, pathways & strategies

Process

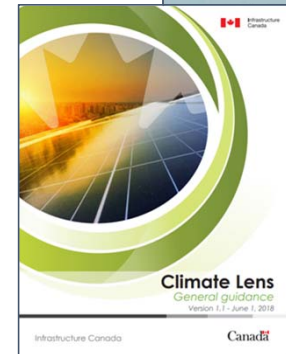
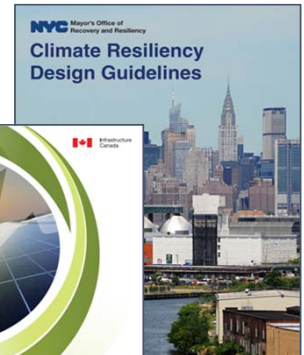
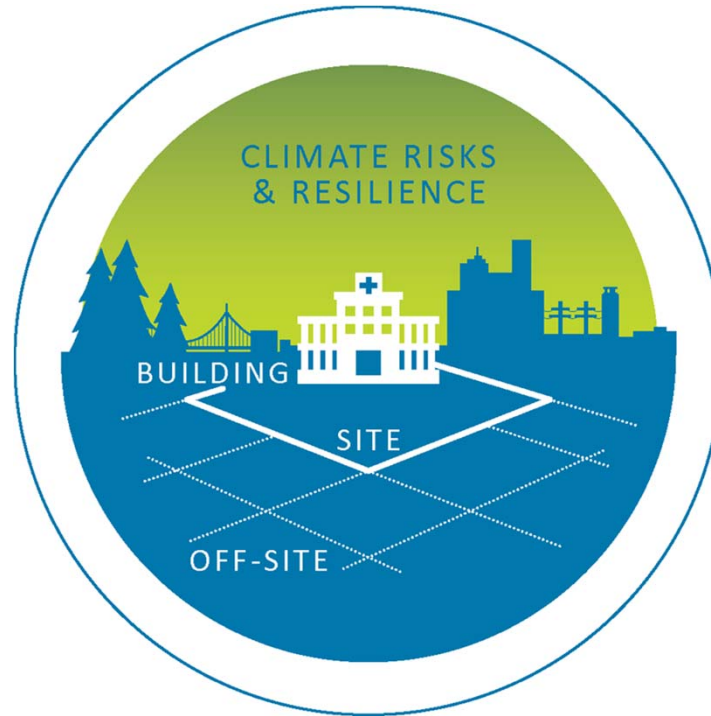
1. Understand key issues at **portfolio & hospital** levels
2. Enable progress at the **organization** level
3. Build a foundation at **health system** level



Tools



Element	Checklist Title	Category
ELEMENT 1 CHECKLIST	CLIMATE RISKS AND COMMUNITY VULNERABILITIES ASSESSMENT	CLIMATE RISKS AND COMMUNITY VULNERABILITIES ASSESSMENT
ELEMENT 2 CHECKLIST	LAND USE, BUILDING DESIGN AND REGULATORY CONTEXT	LAND USE, BUILDING DESIGN AND REGULATORY CONTEXT
ELEMENT 3 CHECKLIST	INFRASTRUCTURE PROTECTION AND RESILIENCE PLANNING	INFRASTRUCTURE PROTECTION AND RESILIENCE PLANNING
ELEMENT 4 CHECKLIST	ESSENTIAL CLINICAL CARE SERVICE DELIVERY PLANNING	ESSENTIAL CLINICAL CARE SERVICE DELIVERY PLANNING
ELEMENT 5 CHECKLIST	ENVIRONMENTAL PROTECTION AND ECOSYSTEM ADAPTATIONS	ENVIRONMENTAL PROTECTION AND ECOSYSTEM ADAPTATIONS



Buildings

Partners & Collaborators

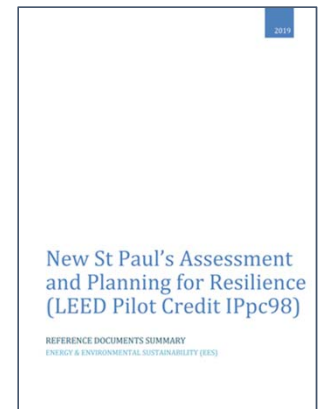
- Indicative design team
 - clinicians
 - consultants

Key Features

- Worksheets
- Resource list (starter)

Results / Learnings

- Compendium of climate resources for in/external use
- A good starting point, with ripple effect on later phases



Health Campus (Site) 1/3

Partners & Collaborators

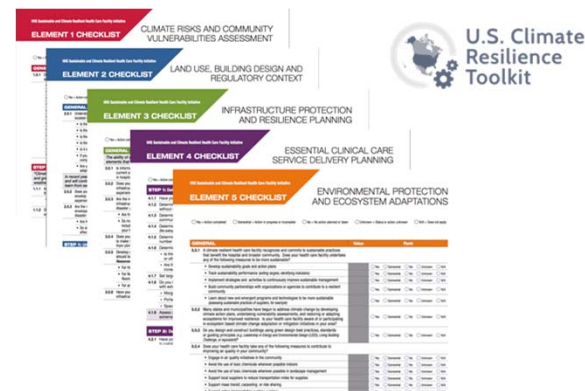
- FMO, clinicians & administration
- Health Emergency Management BC

Key Features

- Prompts engagement across departments & disciplines
- Amenable to developing input for existing asset risk register
- Structured, easy-to-customize

Results / Learnings

- Common challenges across sites
- Concurrent work at portfolio & organizational levels is essential





Health Campus (Site) 2/3

Partners & Collaborators

- Public sector organizations - BC Housing (lead), UBC & local government
- Design teams

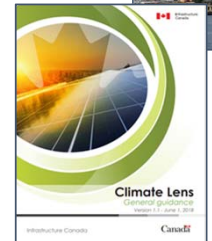
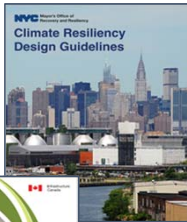
Key Features

- Subject matter experts
- Upscale to industry

Results / Learnings

- Peer-to-peer interactions surface resilience objectives, design strategies
- Synergy in developing new tools e.g. evaluation criteria

Health Campus (Site) 3/3



Partners & Collaborators

- Consultant (Pinna Sustainability) for process design
- Energy & Environmental Sustainability team for cross-pollination
- Indicative design team (including clinical, emergency mgmt, finance)
- Local government (rezoning)

Key Features

- vulnerability & risk assessment (scoring exercise)
- risk matrix: service delivery, supply chain

Results / Learnings

- Process to drive specific action (champions) & next steps (evaluation of design)

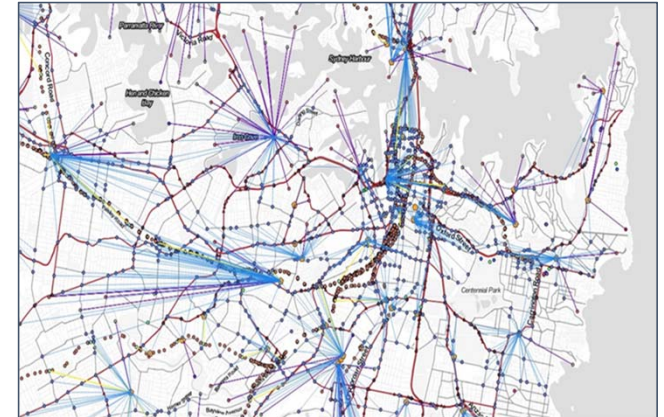
Community (Off-Site)

Partners & Collaborators

- Climate Action Secretariat
- Asset mgmt, real estate, emergency mgmt
- Local governments, power utilities & transportation

Key Features

- Critical infrastructure interdependencies at scale
- Climate shocks & stresses over time
- Nodes & networks to support community resilience
- Potential to integrate with existing tool



British Columbia Emergency Management Common Operating Picture

Last Portal Update: March 12, 2019, 08:00 hrs

Home | About Us | Contact Us | Information | Services | Tools | Reports | Publications | News | BCCIC | BC Emergency | BC Emergency | BC Emergency

British Columbia Emergency Management Common Operating Picture

Welcome to the British Columbia Emergency Management COP. The COP was created for BCCIC and partner agencies by BCCIC in coordination with local and regional governments to improve situational awareness and coordination during provincial emergency events.

News

Please note all Orders, Alerts, TDEs and BCRs are generally updated as required after BCCIC receives information from BCCIC Provincial Duty Manager (PDM). The TDEs receive this information from local governments throughout the day when Order, Alerts, TDEs and BCRs are issued by each jurisdiction.

Important Links

- 1. BC Wildfire Centre - Current Wildfire Situation
- 2. British Columbia Weather
- 3. British Columbia and Alberta Landmarks in 3D - View from Space
- 4. BCCIC Current Order Alerts and BCRs - British Columbia
- 5. Emergency 911/24
- 6. Canada - Situation - Emergency Operations
- 7. BCCIC

HealthADAPT

Partners & Collaborators

- Population & Public Health - Vancouver Coastal, Fraser Health
- Health Emergency Management
- Local government & other local stakeholders

Key Features

- Proposal development process: informal needs assessment
- Leverage, amplify & accelerate existing / planned work
- Part of network of grantees (10), and broader knowledge-building network specific to building climate resilient health systems



Resilience Guidelines for Health Facilities (2020)

Advisory Committee

Task Force

HDR (architecture)
IBI (architecture)
Integral Group (passive design)
RDH (passive design)
AME (engineering)
WSP (engineering)
Stantec (engineering)
Bush Bolman (engineering)
Associated Engineering
Reload Sustainable Design (energy)
BC Housing / MBAR

Project Team

Facilities Management
ED, Projects & Standards
ED, Business Performance
& Corporate Support
Director, Energy & Sustainability
Lead, Climate Resilience

Integral Group
Principle, Health
Principle, Engagement

Health Canada, Climate Change & Innovation
Canadian Coalition for Green HealthCare
National Research Council
Canadian Standards Association

University Health Network (ONT)
Synergie Santé Environnement (QUE)

Ministry of Health, Capital Services Branch
Building Safety & Standards Branch
Climate Action Secretariat
Pacific Climate Impacts Consortium

Metro Vancouver, Climate Change Policy
UBC Campus & Community, Infrastructure
SFU Adaptation to Climate Change Team
City of Vancouver, Resilience & Green Infrastructure
City of Surrey, Sustainability

Working Group



Climate Resilient Health Systems

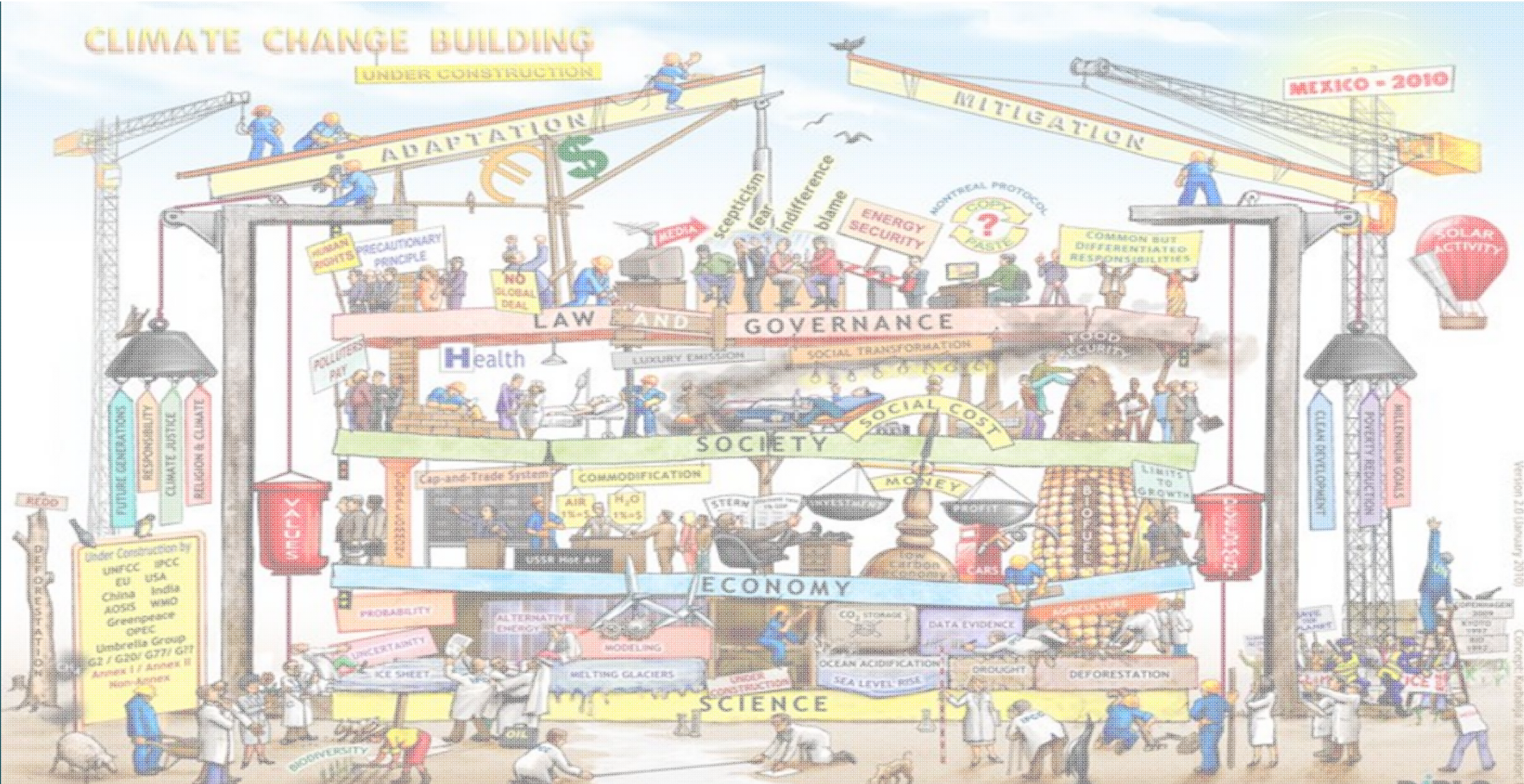


Challenges

- Effectively convey to **leadership & workforce** risks, impacts & resilience (i.e. compel action, a climate lens on key priorities)
- Better highlight **critical role in health service delivery & community resilience** (i.e. mission critical)
- Deepen internal collaboration: intentionally & deeply integrate with GHG emissions reduction efforts to achieve **low carbon resilience**
- Improve timing: **business cases & business plans**
- Actualize **Proportionality Principle**: expenditures versus project size

CLIMATE CHANGE BUILDING

UNDER CONSTRUCTION



<https://bcgreencare.ca/program/climate-resilience-adaptation-program>