Vancouver's Approach to Sustainability & Climate Risk:
Asset Management, Capital Planning & Other Tools

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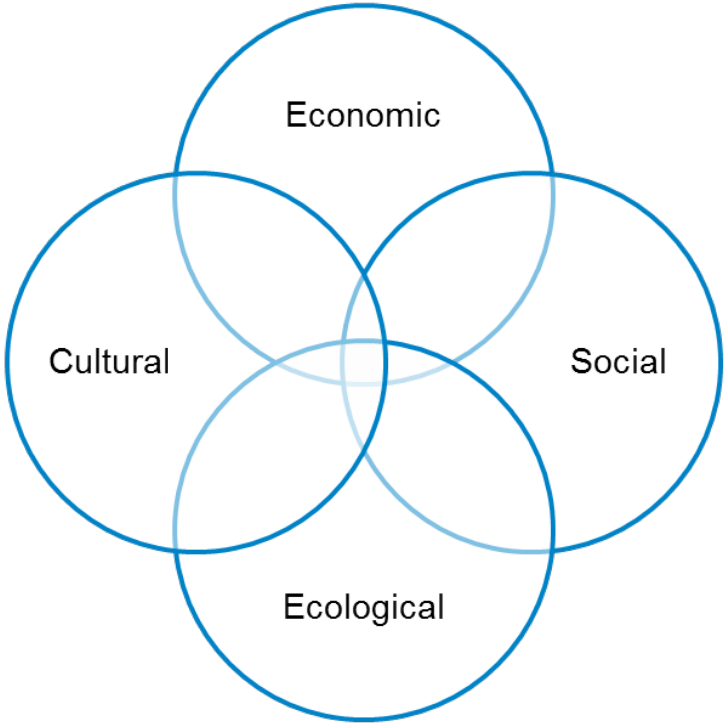
Angela Danyluk RPBio, Senior Sustainability Specialist
City of Vancouver

CITY OF VANCOUVER

1

Sustainability

Strategies & science for assessing risk


Economic
Cultural
Social
Ecological

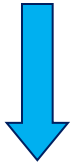
Greenest City Action Plan

3 high-level objectives

10 goal areas

Climate Change Adaptation Strategy

Climate Impacts



Not enough rain causing drought, urban forest damage, low crop yields & changes in species distribution

To much rain causing flooding, road damage landslides & poor water quality

Sea level rise causing flooding, erosion & coastal squeeze

Higher temperatures contributing to wildfire, storms, freeze/thaw, extreme heat & changes in species distribution

What is Risk?

Given a particular impact and system…

Risk = Likelihood x Consequence

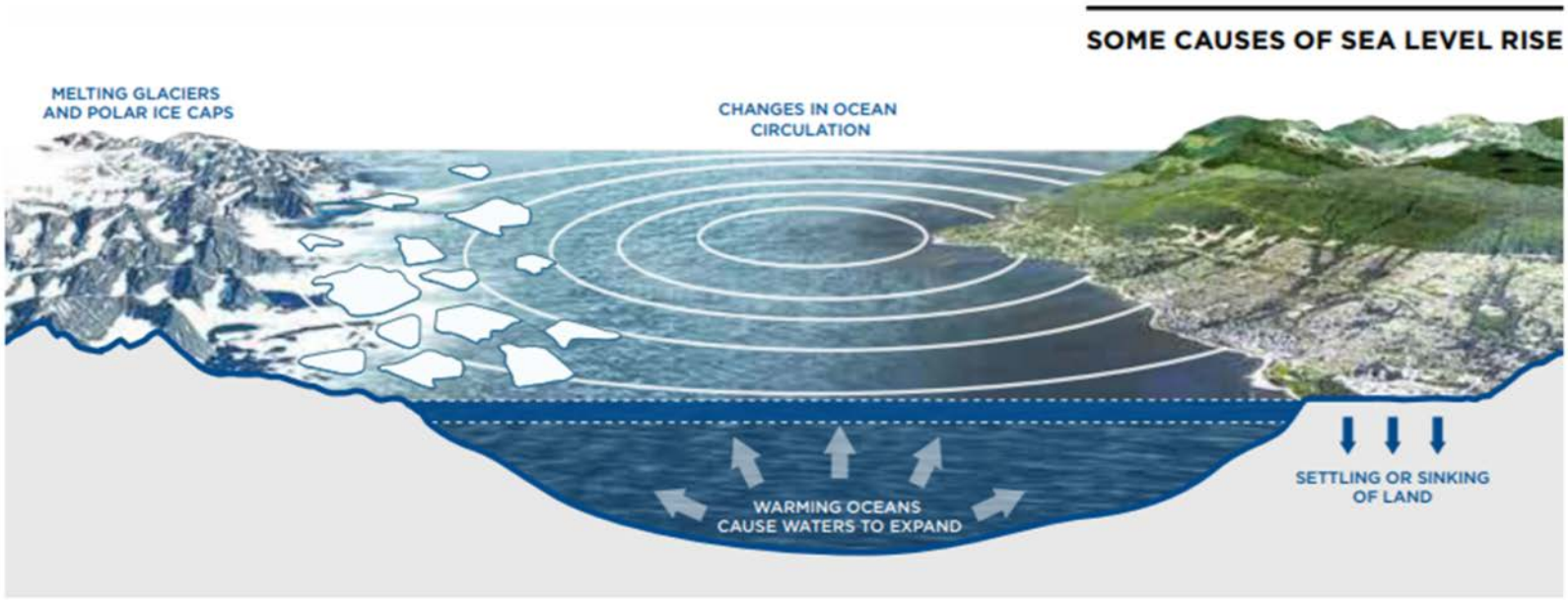
Prioritize our work

Manage expectations

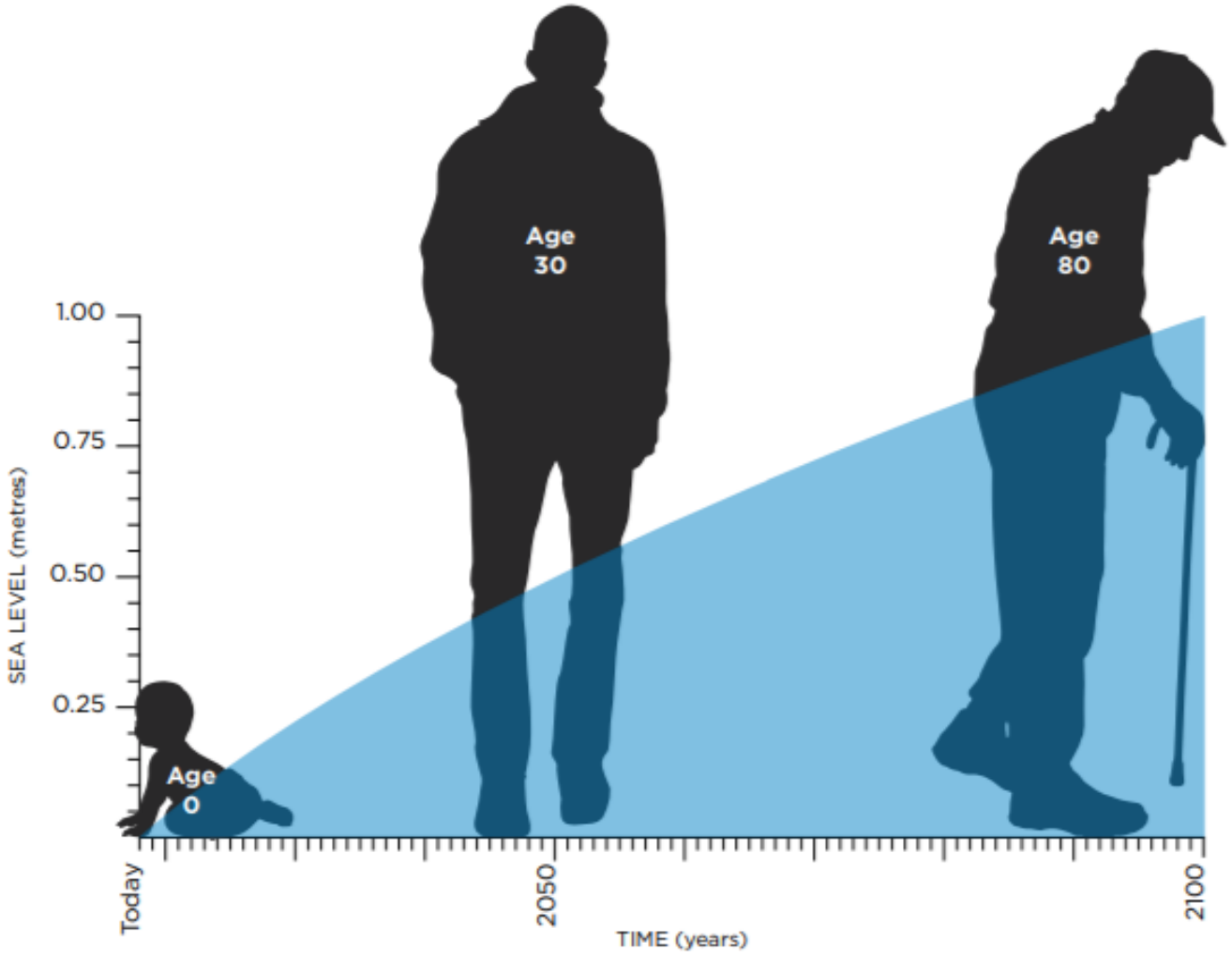
Vulnerability = Sensitivity x Adaptive Capacity

Identify impacts & understand potential mitigation approaches

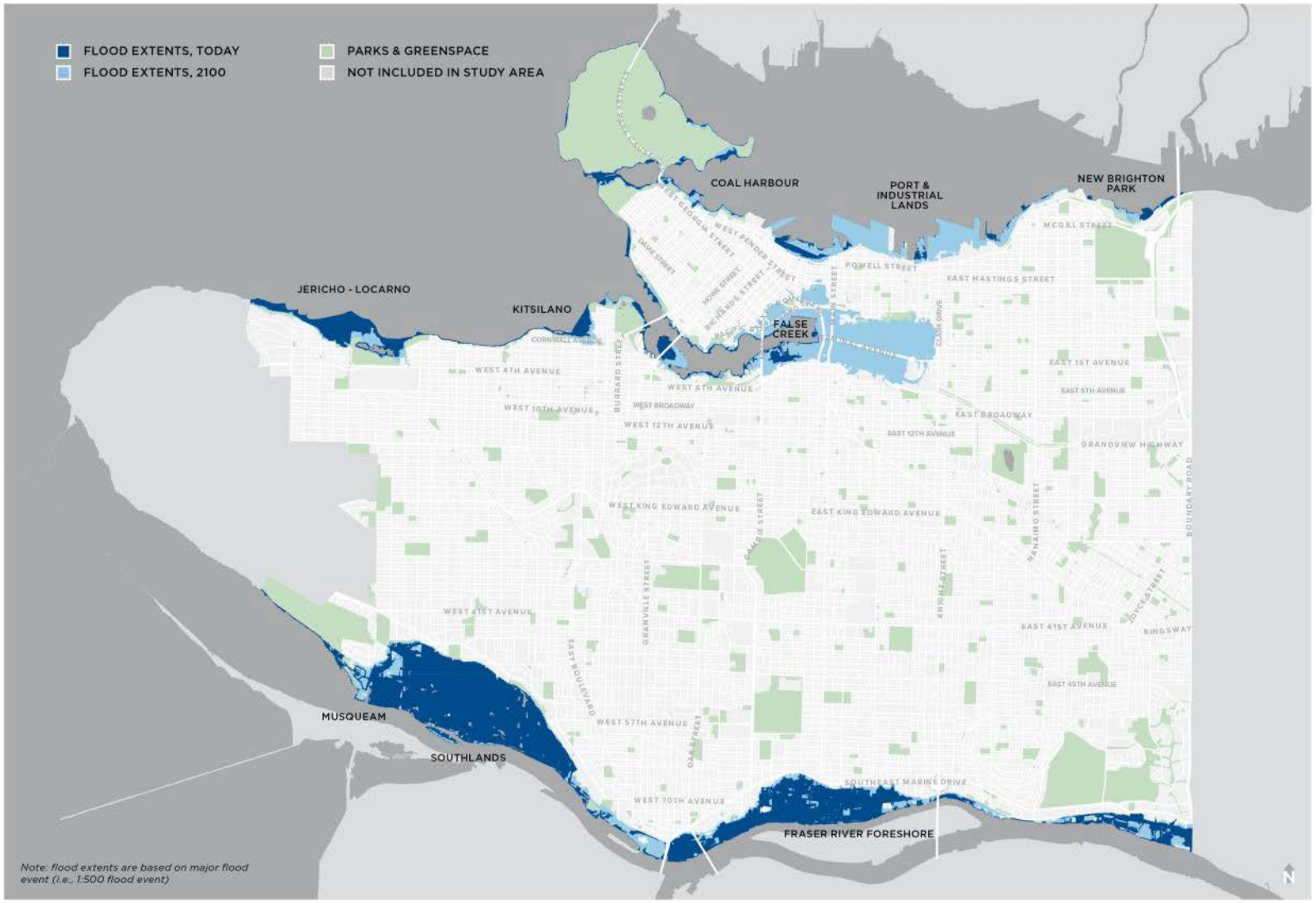
Causes of Sea Level Rise



Future Sea Level



SLR Graphic


FLOOD EXTENTS, TODAY
FLOOD EXTENTS, 2100
PARKS & GREENSPACE
NOT INCLUDED IN STUDY AREA
COAL HARBOUR
PORT & INDUSTRIAL LANDS
NEW BRIGHTON PARK
JERICHO - LOCARNO
KITSILANO
FALSE CREEK
MUSQUEAM
SOUTHLANDS
FRASER RIVER FOREHEAD
Note: flood extents are based on major flood event (i.e., 1:500 flood event)

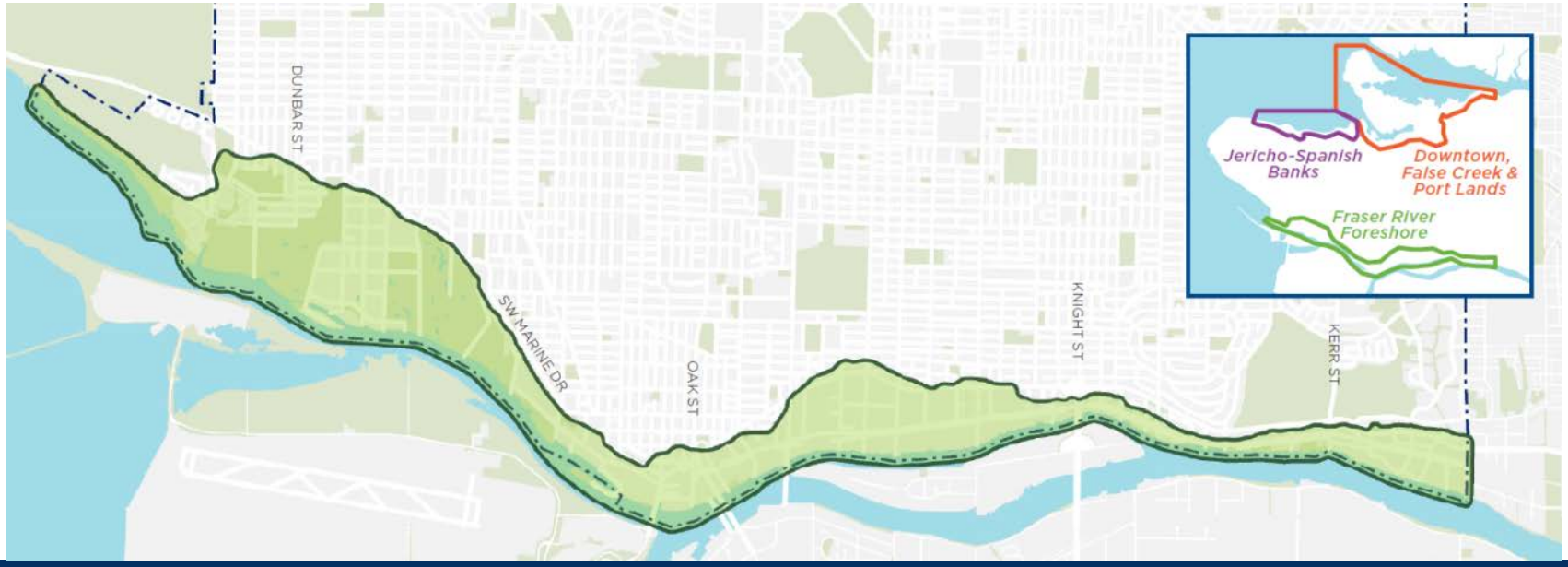
2

Adaptation & Financial Planning

Case studies, examples, tools & business cases

Case Study: Fraser River & Major Assets

- 280 commercial & industrial buildings, 1000 homes & important foreshore habitat
- Focus on education, awareness building & values
- Asset owners workshop: considerable critical infrastructure, interdependencies, coordinated regional approach



Example: Asset Management for Fleet & Facilities

Green Fleet

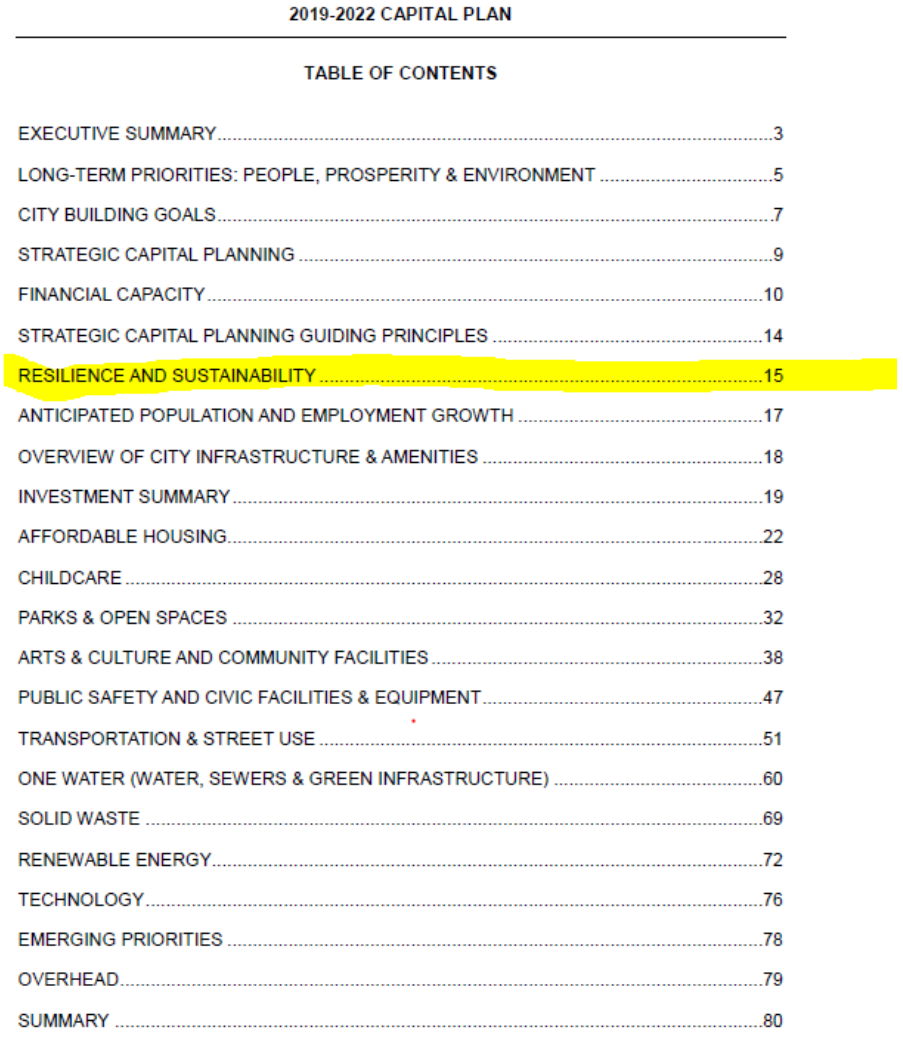
- Fleet inventory, e.g. passenger cars, heavy duty, fuel
- Specific service categories, e.g. training, trip planning, onboarding new hires
- Emission target set by policy, strategy, Climate Action Charter
- Metrics: fuel type, emissions, VKT, % electric vehicles, # right-sizing

Facilities

- Facility inventory
- Corporate vs NGO assets & services
- Emission reduction target set by policy, strategy, Climate Action Charter
- Renewable energy target
- Metrics: GHG/m2, LEED rating, Passive House, co-location

Tool: Capital Planning

- 2019-2022 Capital Plan
- First time including sustainability & resilience
- Core points:
  - Disaster resilient buildings and infrastructure
  - Climate change resilience
  - Community resilience
  - Government resilience

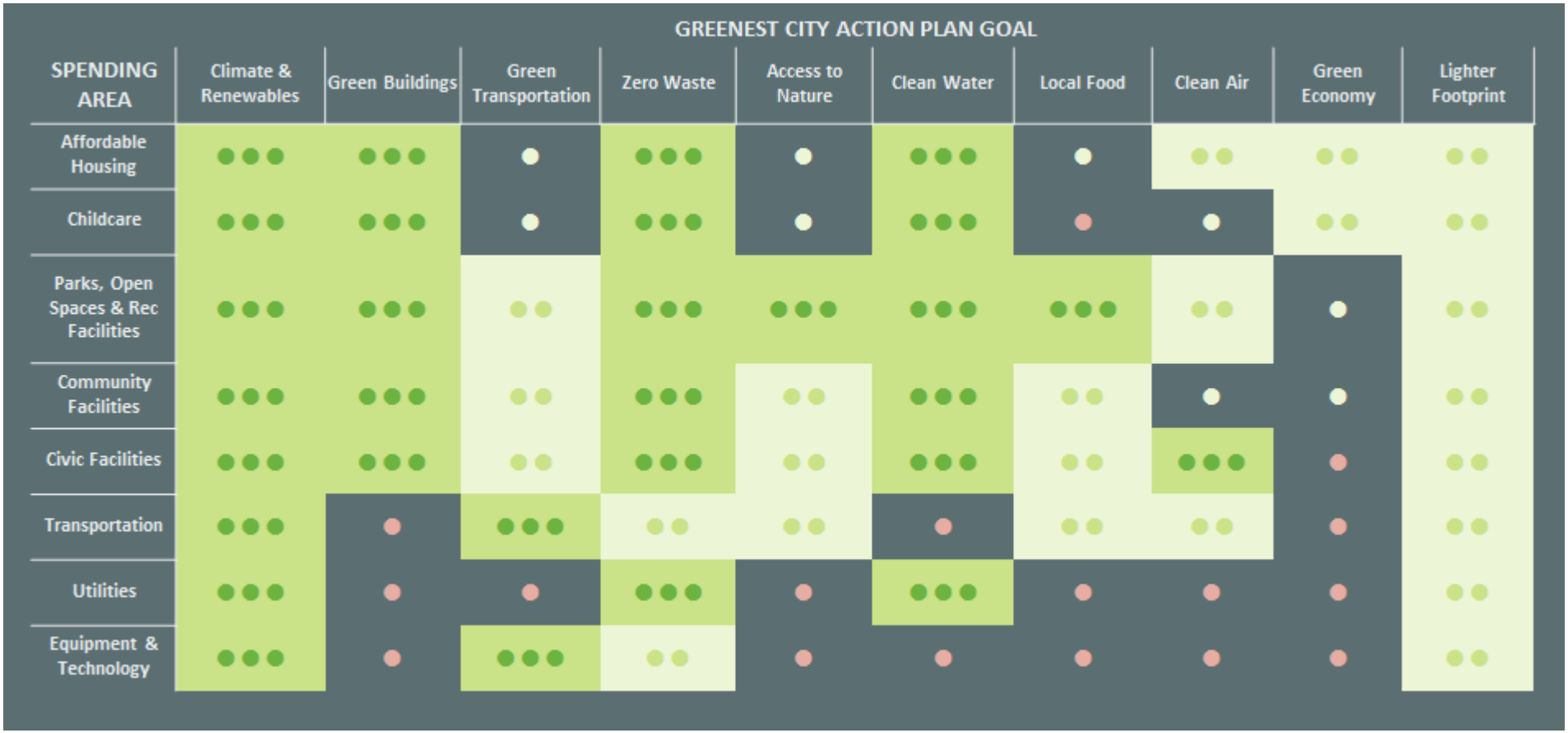


2019-2022 CAPITAL PLAN

TABLE OF CONTENTS

EXECUTIVE SUMMARY 3
LONG-TERM PRIORITIES: PEOPLE, PROSPERITY & ENVIRONMENT 5
CITY BUILDING GOALS 7
STRATEGIC CAPITAL PLANNING 9
FINANCIAL CAPACITY 10
STRATEGIC CAPITAL PLANNING GUIDING PRINCIPLES 14
RESILIENCE AND SUSTAINABILITY 15
ANTICIPATED POPULATION AND EMPLOYMENT GROWTH 17
OVERVIEW OF CITY INFRASTRUCTURE & AMENITIES 18
INVESTMENT SUMMARY 19
AFFORDABLE HOUSING 22
CHILDCARE 28
PARKS & OPEN SPACES 32
ARTS & CULTURE AND COMMUNITY FACILITIES 38
PUBLIC SAFETY AND CIVIC FACILITIES & EQUIPMENT 47
TRANSPORTATION & STREET USE 51
ONE WATER (WATER, SEWERS & GREEN INFRASTRUCTURE) 60
SOLID WASTE 69
RENEWABLE ENERGY 72
TECHNOLOGY 76
EMERGING PRIORITIES 78
OVERHEAD 79
SUMMARY 80

Tool: Sustainability Crosswalk



- ●●● Direct infrastructure/planning & GCAP synergy
- ●● Indirect & moderate planning or infrastructure GCAP synergy
- ● Indirect & minor planning or infrastructure GCAP synergy
- ● Nil to minor impact and GCAP synergy

Future works

- Climate Change Adaptation Strategy refresh:
  - Inform training, species selection, siting & operation and maintenance of urban forest
  - Planning civic facilities to deal with extreme heat and poor air quality

- Intersection of mitigation and adaptation:
  - Embodied carbon accounting
  - Passive house standards: reduce energy consumption and provide future comfort during hot summers through passive cooling
  - New 50 unit, 6 story apartment building in Fort St. John just announced

Business Case for Sustainability

Sustainable businesses are redefining the corporate ecosystems by designing models that create value for all stakeholders – employees, shareholders, supply chains, civil society and the planet. *Harvard Business Review*

- Enhance financial performance
- Reduce risk
- Decrease energy use
- Decrease waste generation
- Decrease material consumption
- Enhance productivity and reduce turn over
- Improve reputation and customer loyalty
- Support innovation

Models for Action

- Land use and regional plans that include sustainability goals
- FCM's Partners for Climate Protection – community and corporate 5-step mitigation program
- ICLEI Canada's Building Adaptive Resilient Communities 5-step adaptation program
- In-house climate action plans, urban forest strategy
- Envision- Sustainable Infrastructure program, LEED, Municipal Natural Assets Initiative, Fraser Basin Council's E3 Fleet program
- Themed action plans or policy: biodiversity, resilient infrastructure, stormwater, green economy, sustainable purchasing, solid waste
- Pilot projects

More Information

- NRCan Impacts and Adaptation (National): http://www.nrcan.gc.ca/environment/impacts-adaptation10761
  - Transportation, marine coasts, sectors, adaptation library
- Ouranos (Quebec): https://www.ouranos.ca/en/programs/
- Prairie Adaptation Research Collaborative (PARC) (Alberta, Saskatchewan, Manitoba): http://www.parc.ca/
- Institute for Catastrophic Loss Reduction (Residential): https://www.iclr.org/
- Intact Centre on Climate Adaptation (Community): http://www.intactcentreclimateadaptation.ca/
- Metro Vancouver climate projections report: http://www.metrovancouver.org/services/air-quality/AirQualityPublications/ClimateProjectionsForMetroVancouver.pdf

Thank you!

Questions?

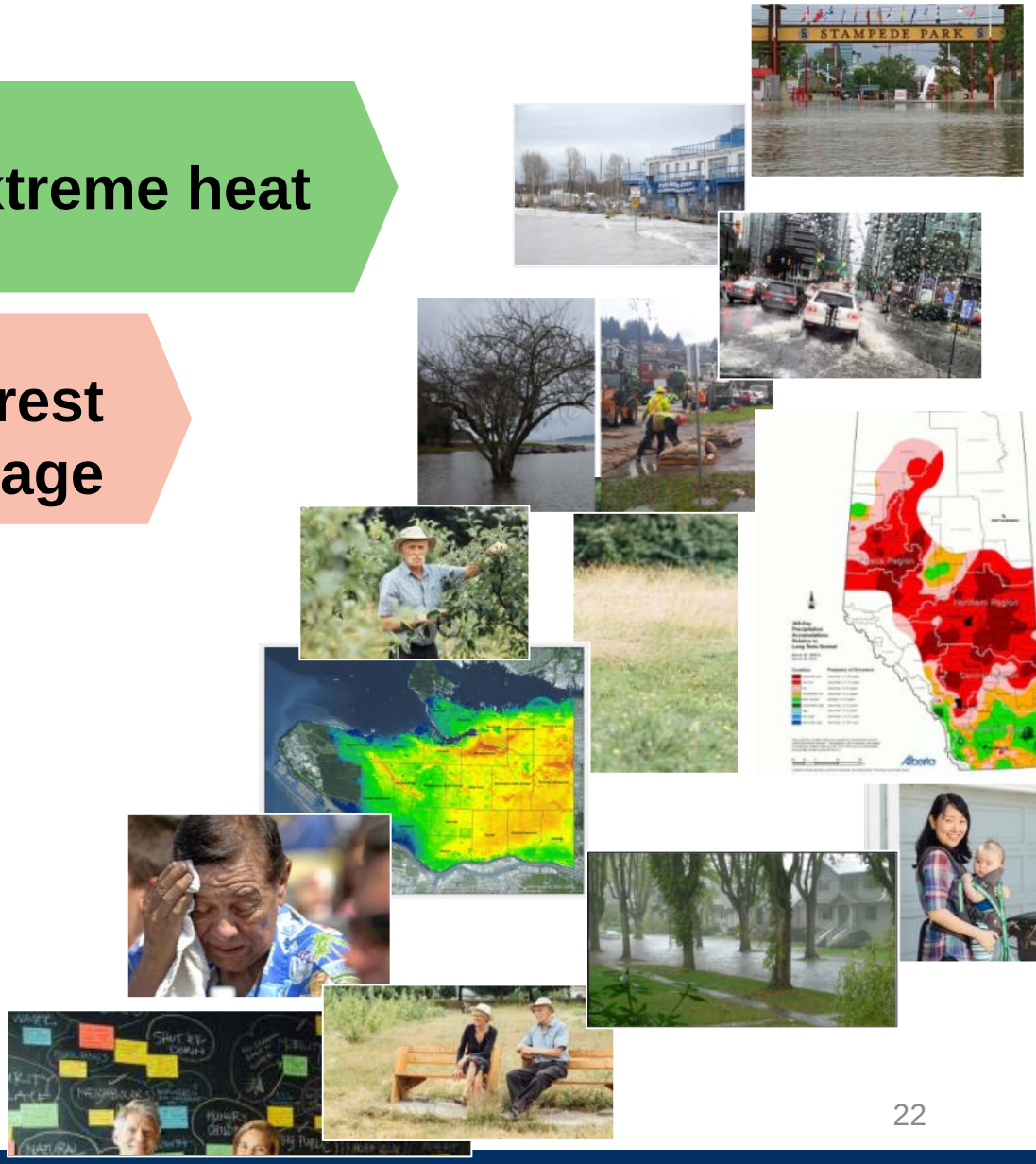
angela.danyluk@vancouver.ca

All the Strategies

Systems are affected

Flooding & extreme heat

Agricultural & urban forest damage

Drainage issues

Road damage