

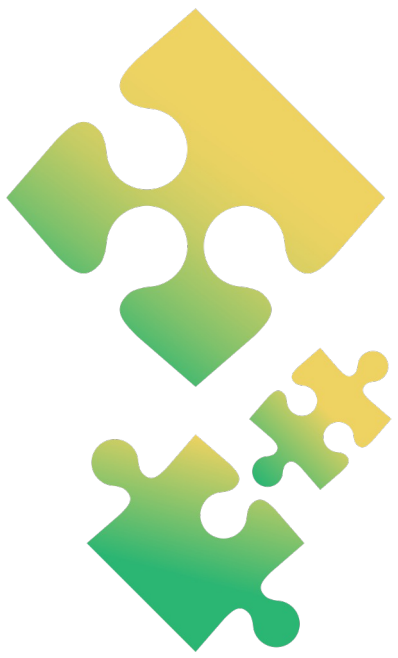
Advancing Climate Action Through Asset Management

Lessons from a Year with Thirteen Municipalities

Jennifer Wilson, P.Eng., City of Salmon Arm
Jody Rechenmacher, P.Eng, Urban Systems



This initiative is offered through the Municipal Asset Management Program, which is delivered by the Federation of Canadian Municipalities and funded by the Government of Canada.



The Climate Action Cohort Program



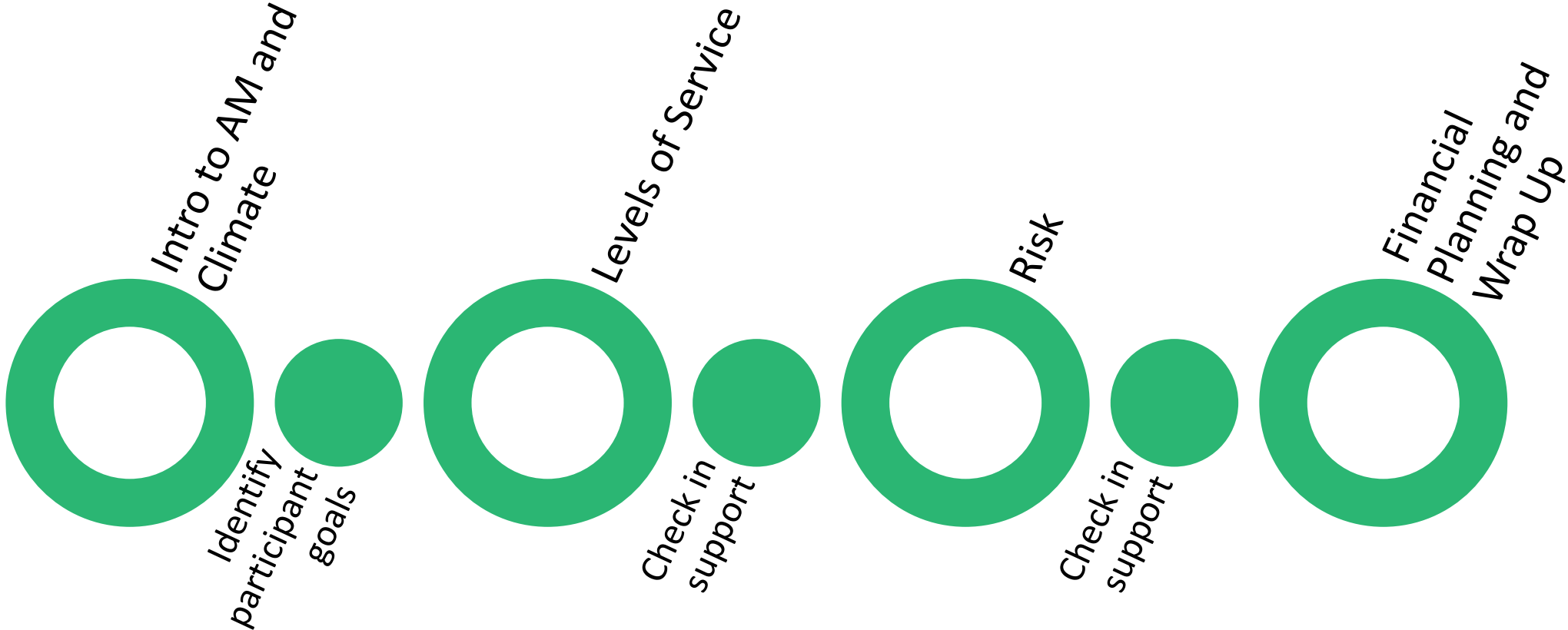
Program Overview

- Cohort program designed as a combination of training, consulting support, and peer-learning
- Objective: to support participants advance integration of climate and asset management
- Content tailored to priorities of the participants
- Municipalities participated as multi-disciplinary teams

Program Participants



Program Outline (12 months)





Experience of Salmon Arm

Salmon Arm Context:

- Unceded territory of the Secwepemc People
- Approximately 20,000 people
- GHG Reduction plan
- Adhoc action on Climate Adaptation
- 0.25 FTE for Climate Action



A path forward can seem daunting...



...but there are resources



Don't get bogged down in the details

- What are we trying to communicate and/or achieve?
- What is the minimum amount of information required to start communicating the message?
- Imperfection Principle: Much more can be lost to inaction than to imperfection
- Sensitivity analysis

"Don't let the perfect
be the enemy
of the good."

~ Voltaire

Use what you have...

HAZARD, RISK & VULNERABILITY STUDY

Hazard / Threat	Probability	Impact	Rank	Probability w/ Climate Change	Impact w/ Climate Change	Risk	Change in Risk	Confidence
Weather Related								
Floods	Likely	Major	High	Likely	Major	High	→	0 Medium
Flash Floods	Unlikely	Minor	Low	Possible	Minor	Medium	↑	1 Low
Drought (low lake levels)	Likely	Minor	Medium	Almost Certain	Minor	Insignificant	↑	1 Medium
Snow load structure collapse	Rare	Moderate	Medium	Rare	Moderate	Medium	→	0 Low
Lightning storms (outside work may need to be suspended)	Possible	Insignificant	Low	Likely	Insignificant	Medium	↑	1 Medium
Unusable roads due to blizzards/ice/freezing rain	Rare	Minor	Low	Rare	Minor	Low	→	0 Medium
Unusable airstrip due to blizzards/ice/freezing rain	Rare	Minor	Low	Rare	Minor	Low	→	0 Medium
Windstorms (taking down trees etc)	Possible	Moderate	High	Likely	Moderate	High	↑	1 Medium

0 Infrastructure Risk Register										
RISK IDENTIFICATION										
Risk No.	Asset providing the Service	What can happen?	When can it occur?	Possible cause	Existing controls	Is risk credible?	Likelihood	Conseq. Injury	Conseq. Service Int.	Conseq. Environment
1	Zone 5 Booster	Failure	Within 2-3 years	Insufficient water supply to meet demands	N/A	Yes	Likely	Insignificant	Catastrophic	Minor
2	Zone 2 Booster	Failure	Anytime now	Fire, flood, electrical failure	Basic maintenance & Inspection of appurtenances	Yes	Possible	Insignificant	Catastrophic	Minor
3	Zone 2 Booster	External piping	Anytime now	Corrosion	inspections	Yes	Likely	Insignificant	Catastrophic	Minor



Overall, it's the conversations that matter

- Created a Climate Action Team
- Reviewed past, current and potential future Climate Action Projects
- Reviewed the readiness scales
- Reviewed outcomes of HRVS with Climate Projections
- Determined next steps (Climate Action Plan!)
- Continued communication with our cohort

Remember to look backwards; celebrate your accomplishments!

CLIMATE ACTION TOP 12



NET-ZERO COMMITMENT

Completed

Signed onto the climate action charter
CEEP proposal 100% renewable energy and 80% community GHG reductions (from 2007) by 2050
2010 OCP GHG reduction plan achieved!

In Progress

Path Forward

Reviewing and determining new GHG reduction goals with OCP update (match to provincial targets - 40% by 2030, 60% by 2040 and 80% by 2050)

BC ENERGY STEP CODE

BUILDING CARBON STANDARDS, RETROFITS TO EXISTING BUILDINGS

Completed

- Following Step code as adopted by the province through BC Building Code (Step 3)
- 2010 Energy Audits on Civic Buildings
 - Community Centre
 - Public Works
 - RCMP
 - Shaw Arena
- Progress on planned upgrades from Energy Audits
 - Public Works Upgrades completed 2022
 - Portion of RCMP upgrades completed
- Geothermal at City Hall
- Solar Project at Art Gallery
- CEEP
- Solar readiness assessment (City Hall) - Not reasonable
- LED lighting replacements in City Buildings
- Rigid insulation on PWs building
- HVAC Upgrades PWs

In Progress

- Continued progress on LED lighting replacements Civic buildings

Path Forward

- Step code acceleration
- 0 Carbon Step Code
- Heat pump retrofit programs
- Building performance policy
- Update Energy Audits on Civic Buildings
- Promote energy efficient building improvements through education and/or provincial incentive programs including energy audits
- Review heat exchangers for WPCC
- Use EAC to act as ambassadors for retrofit programs (CEEP)

EV READINESS

Completed

- 2 Charging Stations in City Hall
- Started transition to EV vehicles for people movers (1 full electric & 4 hybrids)
- Assessed hydro requirements for PWs
- Partnered with BC Hydro for public charging stations (CEEP)
- Low barrier for EV installations (no DP necessary)
- Advertising campaign tied with tourism to find local EV stations (CEEP) (third party apps)

In Progress

- Continued partnering with BC Hydro for public charging stations (CEEP)

Path Forward

- Continuation of transition to EV vehicles
- Assess hydro requirements, etc. for EV readiness in all City Facilities and parking lots; Complete capital upgrades in priority order
- Prioritized Budget for upgrades as determined in readiness assessment
- City e-bike
- EV chargers at Arena and Rec Centre and other city parking lots
- Promote provincial incentive programs
- EV ready homes & hydro ready neighborhoods (Penticton, Kelowna & Kamloops examples)
 - Include as part of an Energy Development Permit Area for SFDs (CEEP)

RISK ASSESSMENT/ADAPTATION PLAN/EMERGENCY PREPAREDNESS PLAN

Completed or in Progress

- Partnered with (Shuswap Emergency Preparedness) SEP
- Some staff trained in Emergency Response (EOC)
- Asset Risk Assessments completed for some asset classes
- Heat Mapping completed through AT Master Plan
- Wildfire management programs South Canoe & Wildfire Covenants on high risk properties (rural)
- Floodplain Covenants
- Geotechnical covenants
- Localized assessment of known areas of geotechnical concern (add link)
- Firesmart programs
- Capital works programs aimed at adaptation (culvert upgrades, water sustainability (fire protection & conservation), main looping, slope stabilization, etc.)
- Water Conservation Planning
- Dangerous tree mitigation planning and work
- Generator installs for critical infrastructure
- Emergency Response Plans
- Food security funding
- Update of the SDSB including adaptation measures from Master Plans
- SDM Planning
- Low barrier processes for risk reduction for public
- Source protection control program

In Progress

- Currently preparing a Business Continuity Plan
- Little Mountain fuel mitigation work
- Preparing fuel mitigation work plans for Park Hill
- Floodplain mapping update
- Upgrades to EOC training underway
- Firesmart programs
- Interface Planning (Province is working on fly hills & NE slope of Mt. Ida)
- Capital works programs aimed at adaptation (culvert upgrades, slope



A good (?) Dad joke is the perfect filler to bridge transitions



Cohort Lessons Learned in Integrating Climate and Asset Management

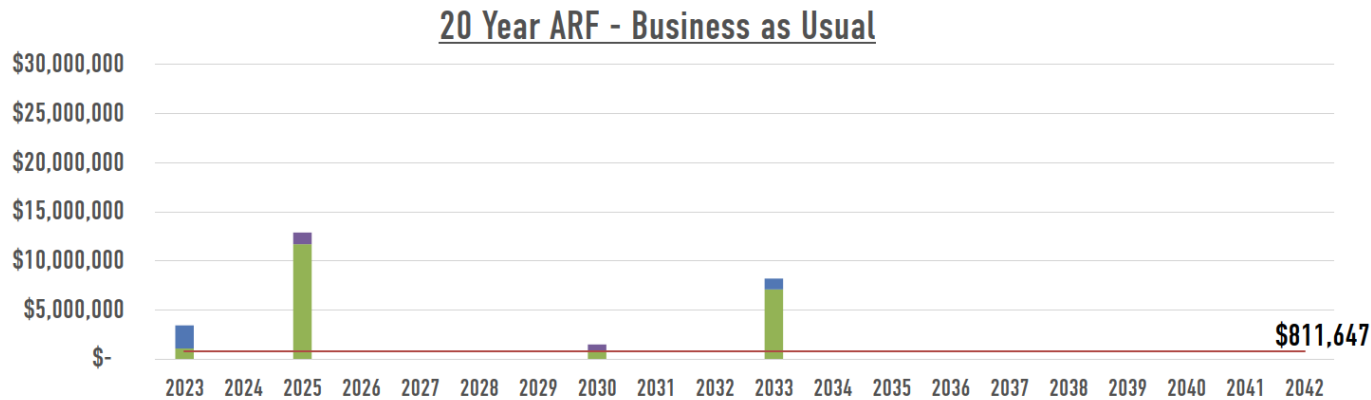
1. Yes, it's challenging. Just start.



2. Context matters.



3. We don't need perfect data to start exploring future scenarios.

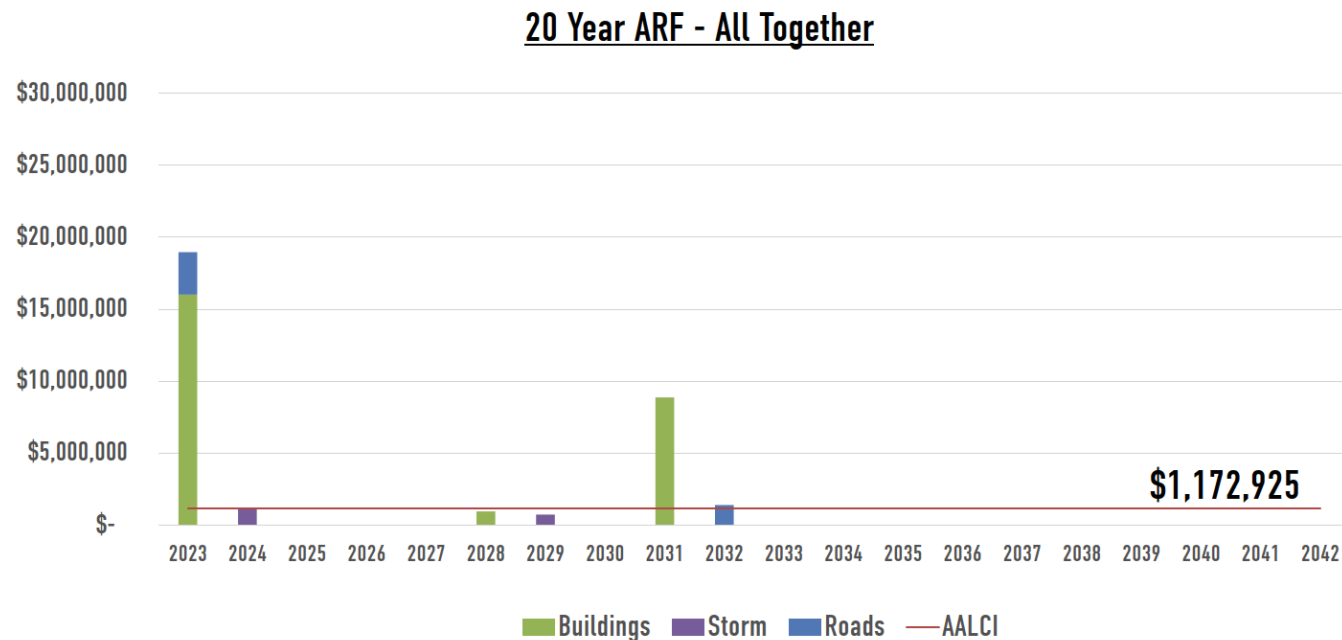


25% *increase* in building replacement costs

5% *decrease* in building useful life

5% *decrease* in asphalt useful life

5% *decrease* in culvert useful life

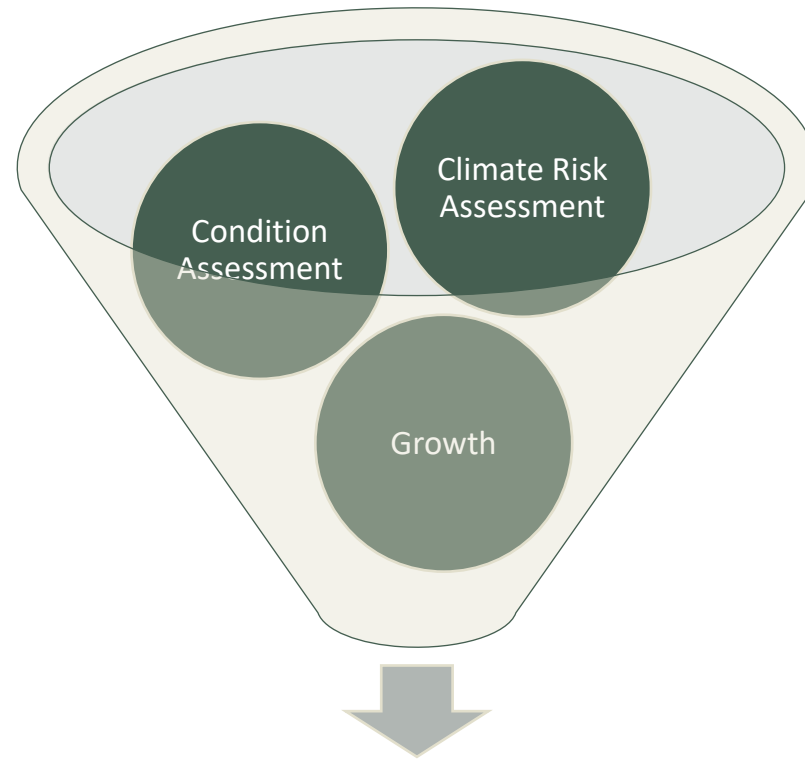


Addition of a \$2M dyke

Addition of \$6.2M worth of stormwater ponds



4. Service delivery is a powerful lens for integrating information, tools, processes, and people.



Integrated Planning and Decision-Making

5. Don't overlook connections to operations and maintenance.

FCM FEDERATION OF CANADIAN MUNICIPALITIES / FEDERATION CANADIENNE DES MUNICIPALITÉS

Operations & maintenance for climate resilience:

Six strategies for your municipality

Actions you can take to build resilient **transportation** systems



Operate & maintain

Adaptation actions
Actions to manage the impacts of climate change

- Implement load restrictions on routes where asphalt and road base have not been adapted to changes in precipitation or temperature
- Increase the frequency of crack-filling and pothole repair, and regularly grade and maintain ditches and shoulders, to avoid further degradation of road surface

Low carbon resilience actions
Actions that reduce GHG emissions & reduce vulnerability to climate change impacts

- Manage vegetation in ditches for plant health, and to ensure proper flow and drainage
- Increase frequency of street sweeping on common cycling routes to improve cycling comfort and safety

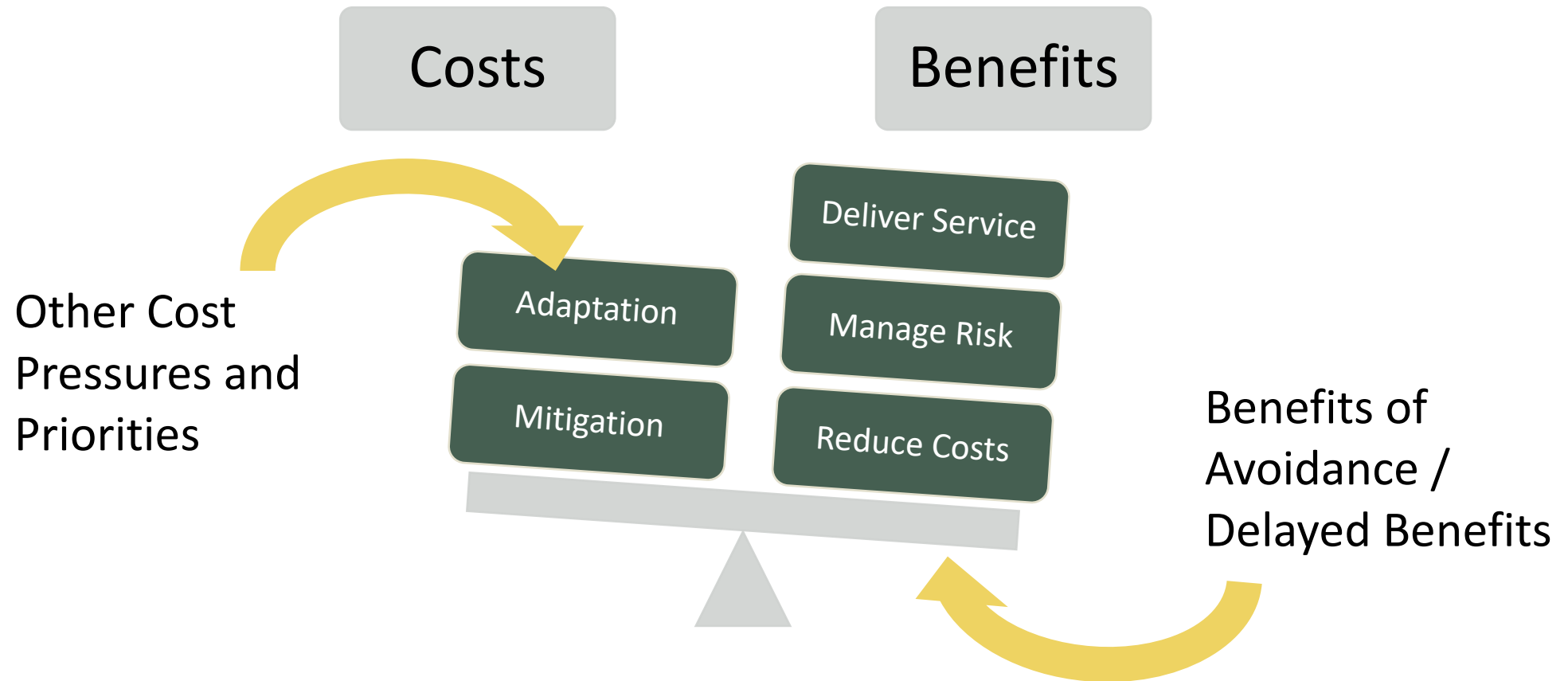
Mitigation actions
Actions to reduce GHG emissions that cause climate change

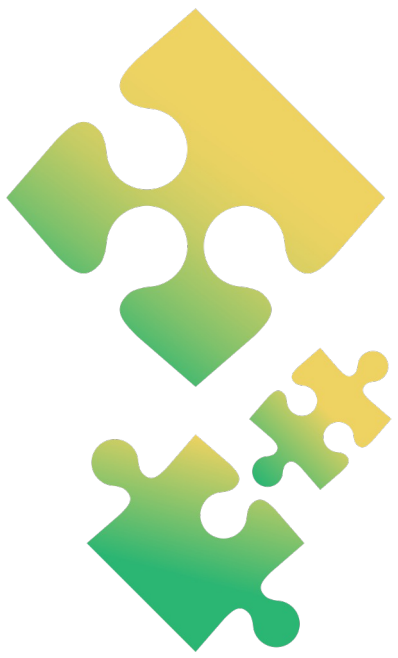
- Manage fleet to reduce GHG emissions by choosing fuel efficient (or electric) vehicles – provide appropriate driver training
- Prioritize winter maintenance of active and public transportation routes
- Dedicated lane allocation to public transportation

6. Mindset, attitude, and communication are not soft skills.



7. The business case for action is critical.





THANK YOU!