Session 4: Long-Term Financial Planning and Climate Change

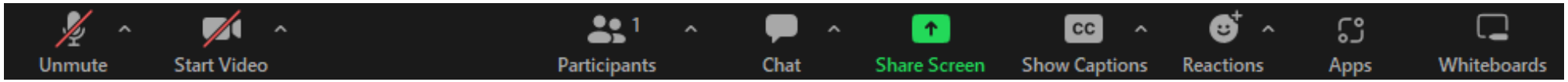
Monday and Tuesday, September 18-19, 2023

CNAM Canadian Network of Asset Managers

Canada FCM FEDERATION OF CANADIAN MUNICIPALITIES FÉDÉRATION CANADIENNE DES MUNICIPALITÉS

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.

Zoom Housekeeping



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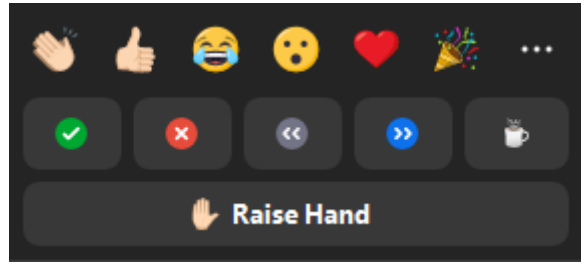
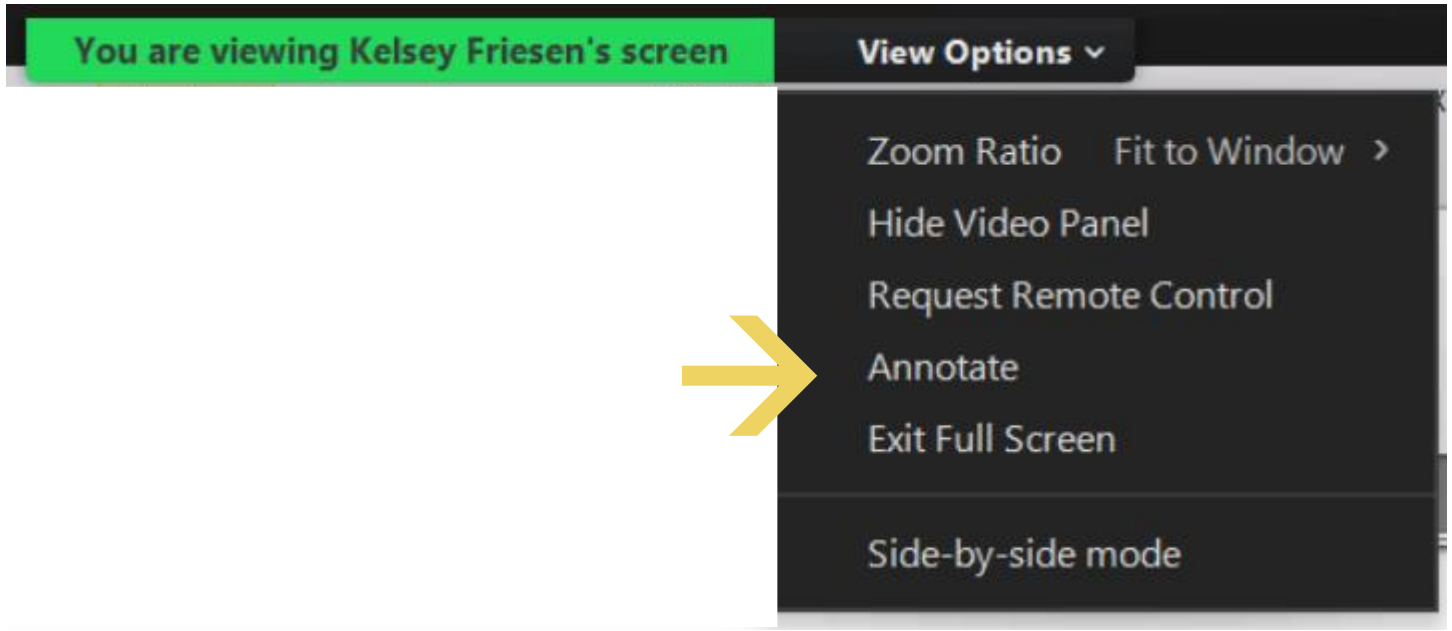


Technical Troubles?

Kelsey Friesen – kfriesen@urbansystems.ca

Zoom Housekeeping - Annotate



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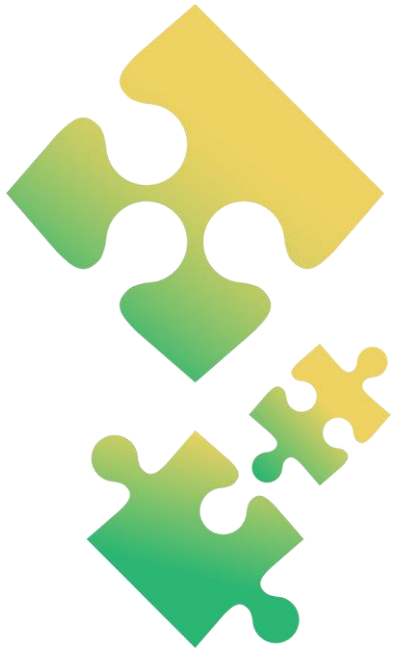
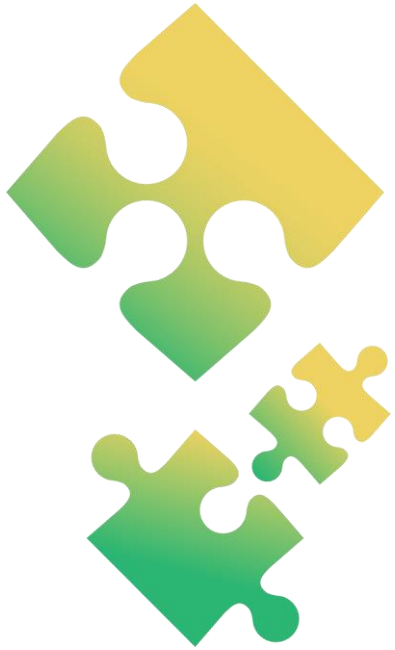


Welcome!

Bernadette O’Connor, CNAM MAMP Steering Committee

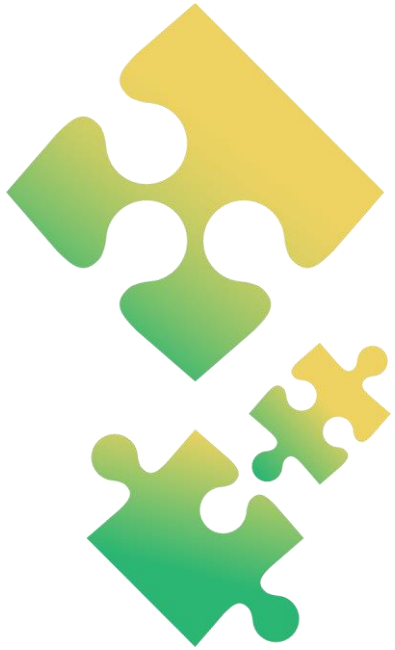


Welcome and How Have You Been?

Workshop 4 Learning Objectives

After completing this session, you will be able to:

- Identify how to use available information to estimate how climate change and climate action may impact asset investment needs and long-term financial planning strategies.
- Reflect on the cohort training experience and complete the cohort training reporting requirements.
- Identify your next steps for integrating climate considerations with asset management.



Module A: Introduction

Bringing together what we've discussed so far

Levels of Service (LOS)	What are the impacts of climate on our LOS? What changes do we need to our assets deliver the same LOS? Do we adjust LOS to be resilient to climate or reduce GHG emissions? Where do we need to acquire/build new assets to deliver new services?
Risk	What are risks to our service delivery? What do we need to do to our assets to manage these risks?

Focusing on the impacts of climate change on LTFP

- How might climate change and reducing our emissions impact our long-term capital costs for asset renewal and acquisition?
- How do long-term capital costs and funding requirements change under different scenarios for the future?
- What are the implications for operations and maintenance costs and funding? (qualitatively)
- What are the implications of our current funding levels on long-term sustainable service delivery?

Where do you fit in?

- Our assumption is that you will not be the ones developing the LTFPs.
- You do not need to be finance experts, rather you will need to work with Finance to develop these plans.
- This workshop is focused on equipping you to explore financial impacts of climate change and begin conversations with your finance colleagues to plan for sustainable levels of funding.

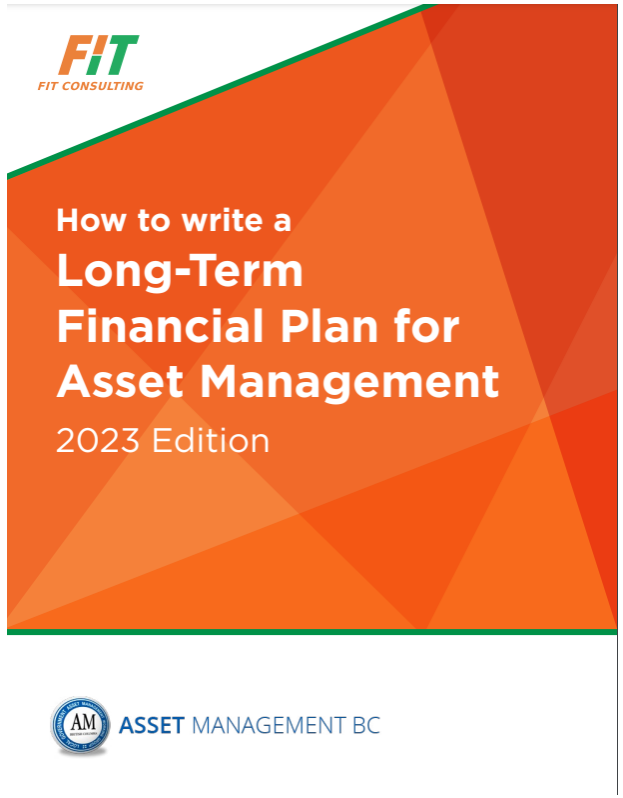
Impacts of Climate Change on LTFP

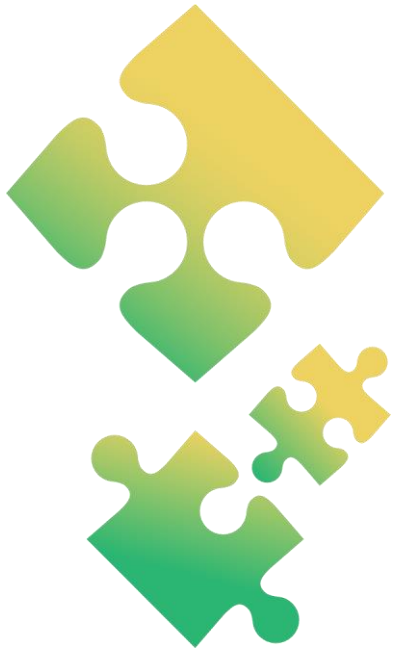
WHAT WE WILL COVER	WHAT WE WILL NOT COVER:
• How to integrate climate considerations in an LTFP • Qualitative analysis of operations and maintenance costs and funding	• How to develop an LTFP • Quantitative analysis of operations and maintenance costs • Revenue planning

Module B:
Long-Term Financial Planning and Climate Change

COMPANION RESOURCE:

Refer to the guide *How to Write a Long-Term Financial Plan for Asset Management*, by Asset Management BC



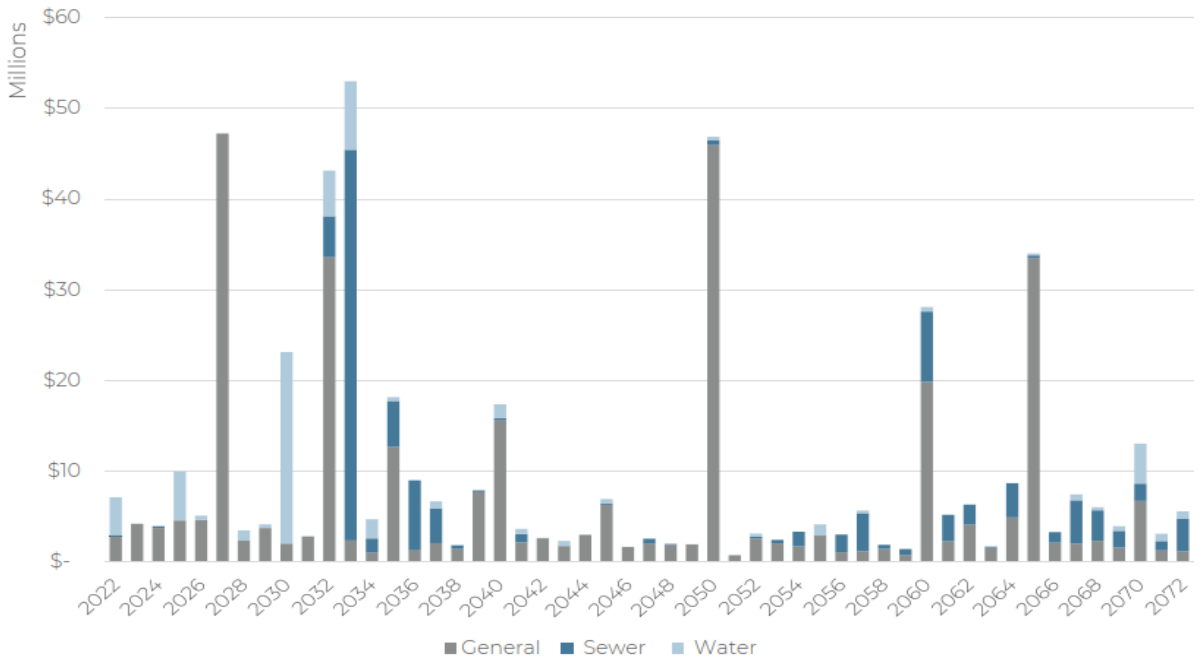


POLL

What is a long-term financial plan (LTFP)?

- Identifies long-term financial trends.
- Explores scenarios to inform decisions about funding, levels of service, or risk.
- Involves projecting revenues, expenses, and other factors that have an impact on the organization's finances.

Asset Renewal Forecast (ARF)

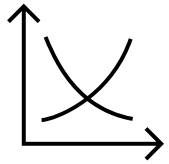


Source: Asset Management Plan & Long-Term Financial Strategy, District of Central Saanich, 2022. Available: https://www.centralsaanich.ca/sites/default/files/uploads/documents/central_saanich_asset_management_plan_and_long_term_financial_strategy.pdf

The ARF focuses only on capital expenses related to existing assets.

We can use the ARF to test financial impacts of climate adaptation and actions for reducing GHG emissions.

Benefits of the ARF

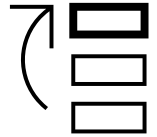


Inform financial planning and timing of renewal or replacement

Communicating the business case for AM and climate action

Building awareness about financial considerations in sustainable service delivery

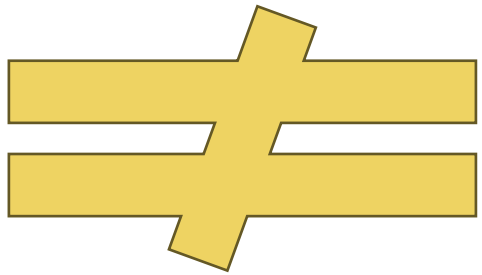
Exploring various scenarios



Prioritizing further work

What the ARF is not

Asset Replacement Forecast



Capital Plan

Does NOT include O&M costs

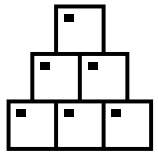
What data do you need to prepare the ARF?

Data	Criticality	Degree of Accuracy Required
Material	Medium	Low accuracy required
Size & Location	Medium	Moderate accuracy required
Costing	High	Moderate accuracy required
Estimated Useful Lives	Critical	Moderate accuracy required
Condition Assessments	Low	Low accuracy required

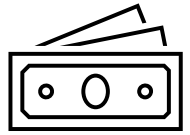
Source:Image adapted from *How to Write a Long-Term Financial Plan for Asset Management, Asset Management BC, 2023*

Assumptions in the ARF

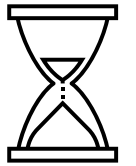
Assets in your inventory



Materials and size



Replacement costs

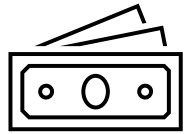


Useful life

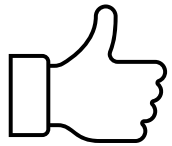
Estimates and assumptions about climate impacts

Impact of climate change

Managing impacts



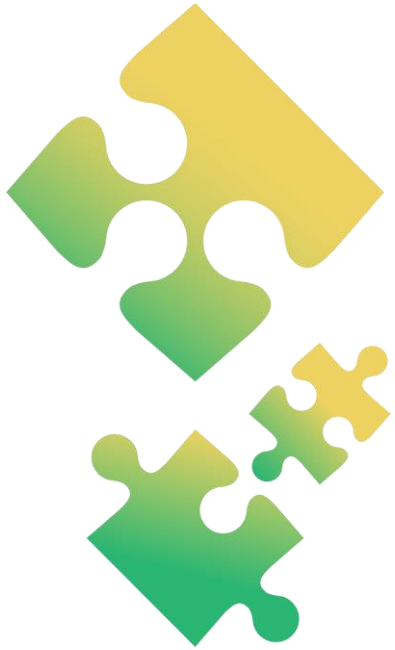
Adaptation costs



Actions

Accuracy and Completeness

- You are never going to have perfect information about your assets, especially when trying to incorporate climate change considerations.
- The appropriate level of accuracy and completeness depends on decision context:
  - High-level information is appropriate to build awareness of long-term funding requirements and impacts of climate.
  - Detailed information is necessary for near-term capital planning to inform decisions about prioritization, financing, and cash flow.
- Start where you are, with the data you have.



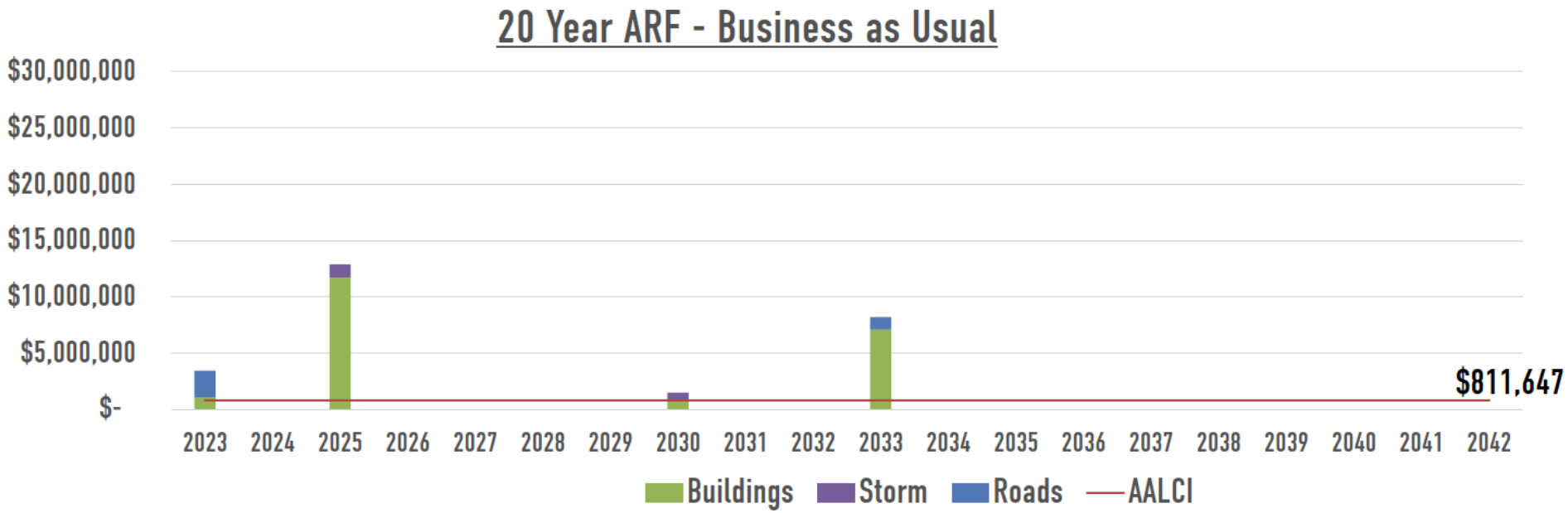
BREAKOUT DISCUSSION

Please reference your workbook for questions and space to record what you're learning.

What is the impact of these changing inputs on our overall results?

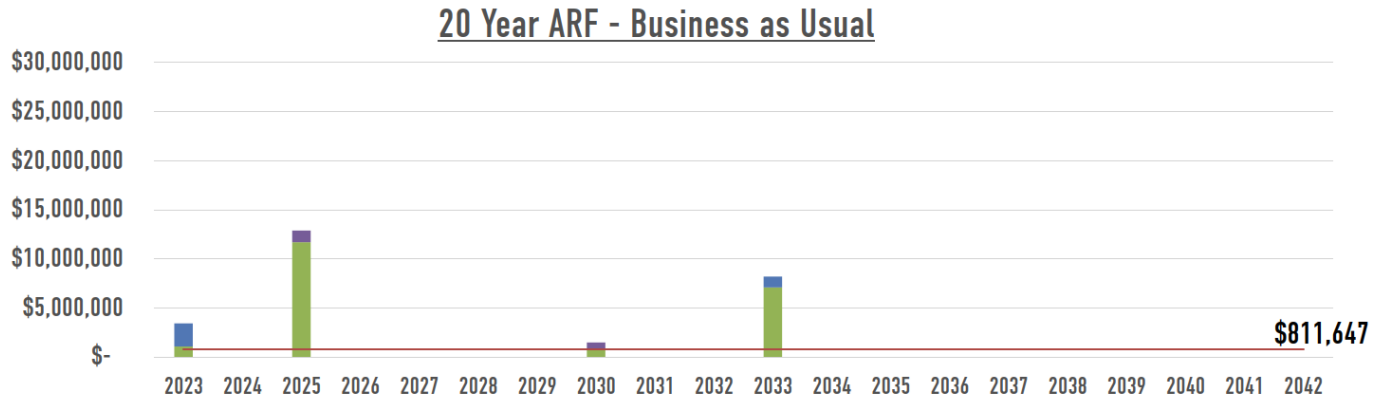
- The ARF summarizes all the replacement needs of existing infrastructure.
- Adjusting these inputs can change the forecast; some inputs are more sensitive than others.
- The ARF is a tool for decision-making and does not provide you with a final plan for infrastructure renewal.
- The power of this tool is in running scenarios that can help you evaluate your assumptions and communicate long-term implications of infrastructure decisions in financial terms.

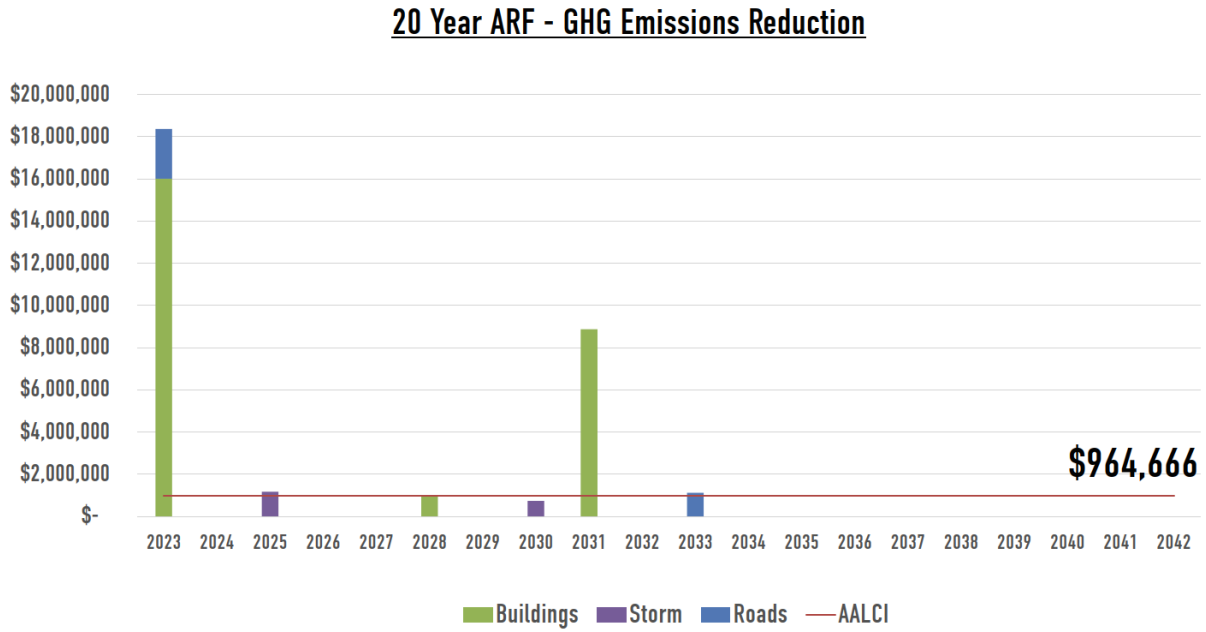
Baseline Scenario



This is the baseline scenario that you can compare the following graphs against, to evaluate how changing inputs changes the forecast.

Scenario 1: Consider actions to reduce GHG emissions

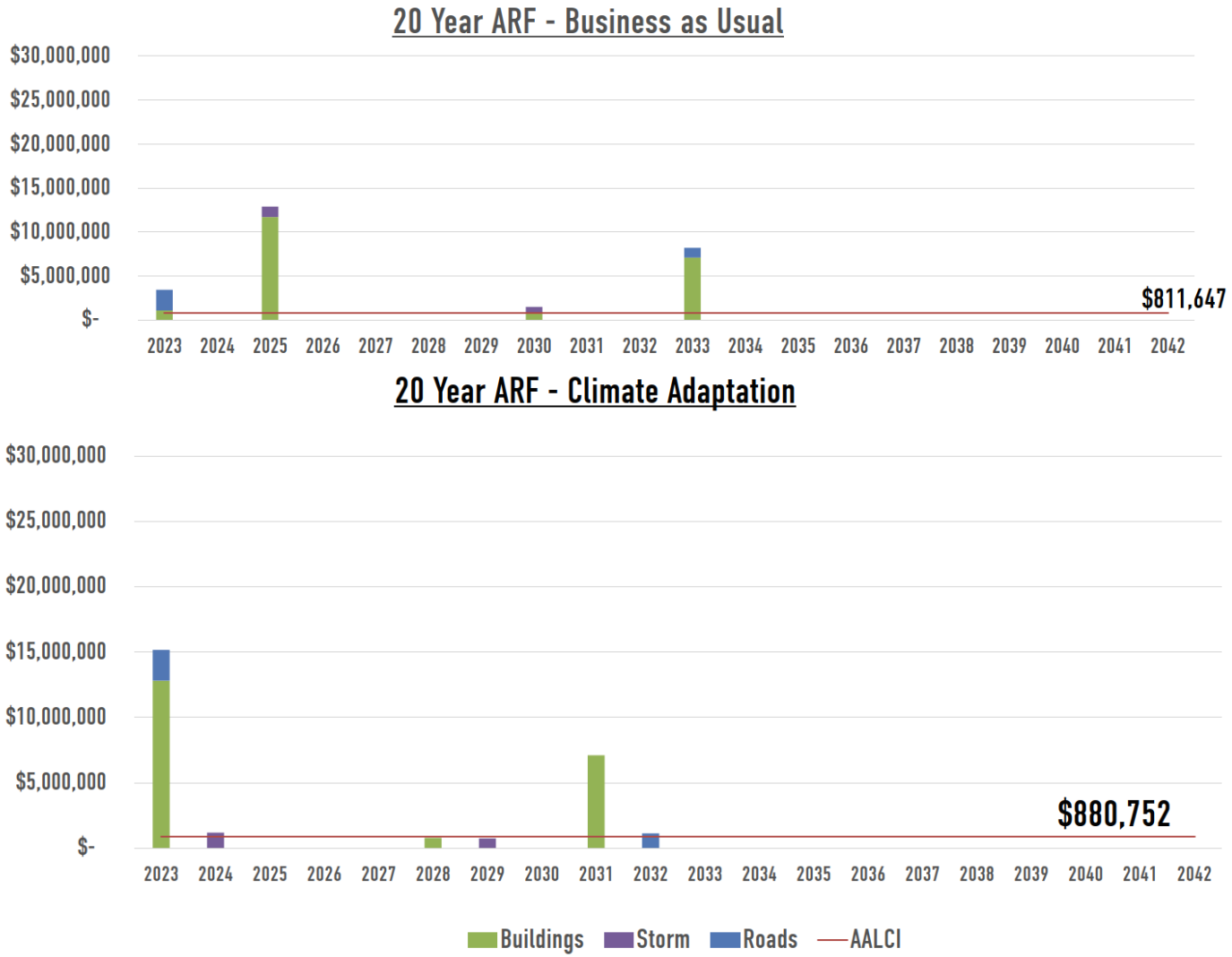




25% *increase* in building replacement costs

5% *decrease* in building useful life

Scenario 2: Consider actions to adapt to climate change



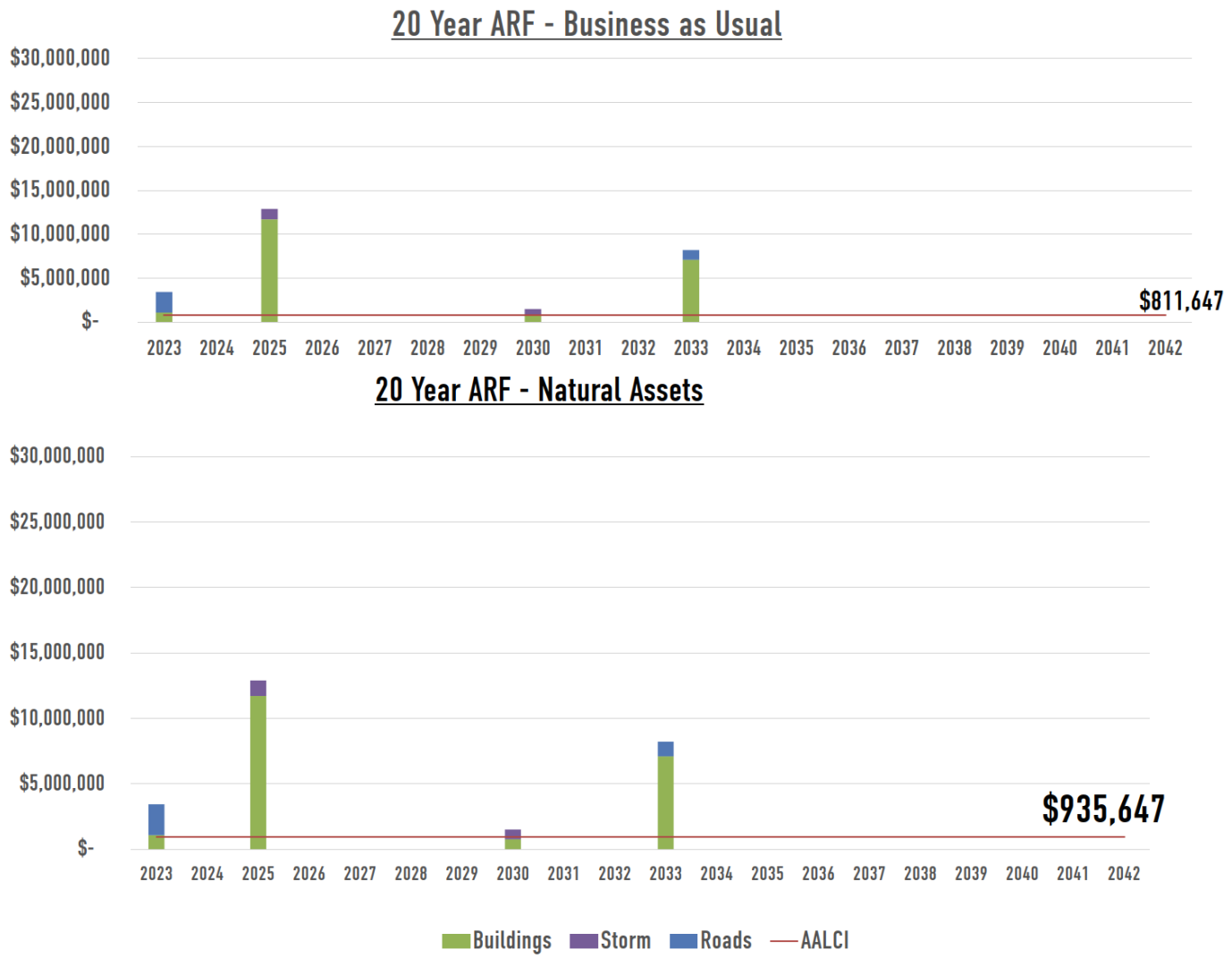
5% *decrease* in building useful life

5% *decrease* in asphalt useful life

5% *decrease* in culvert useful life

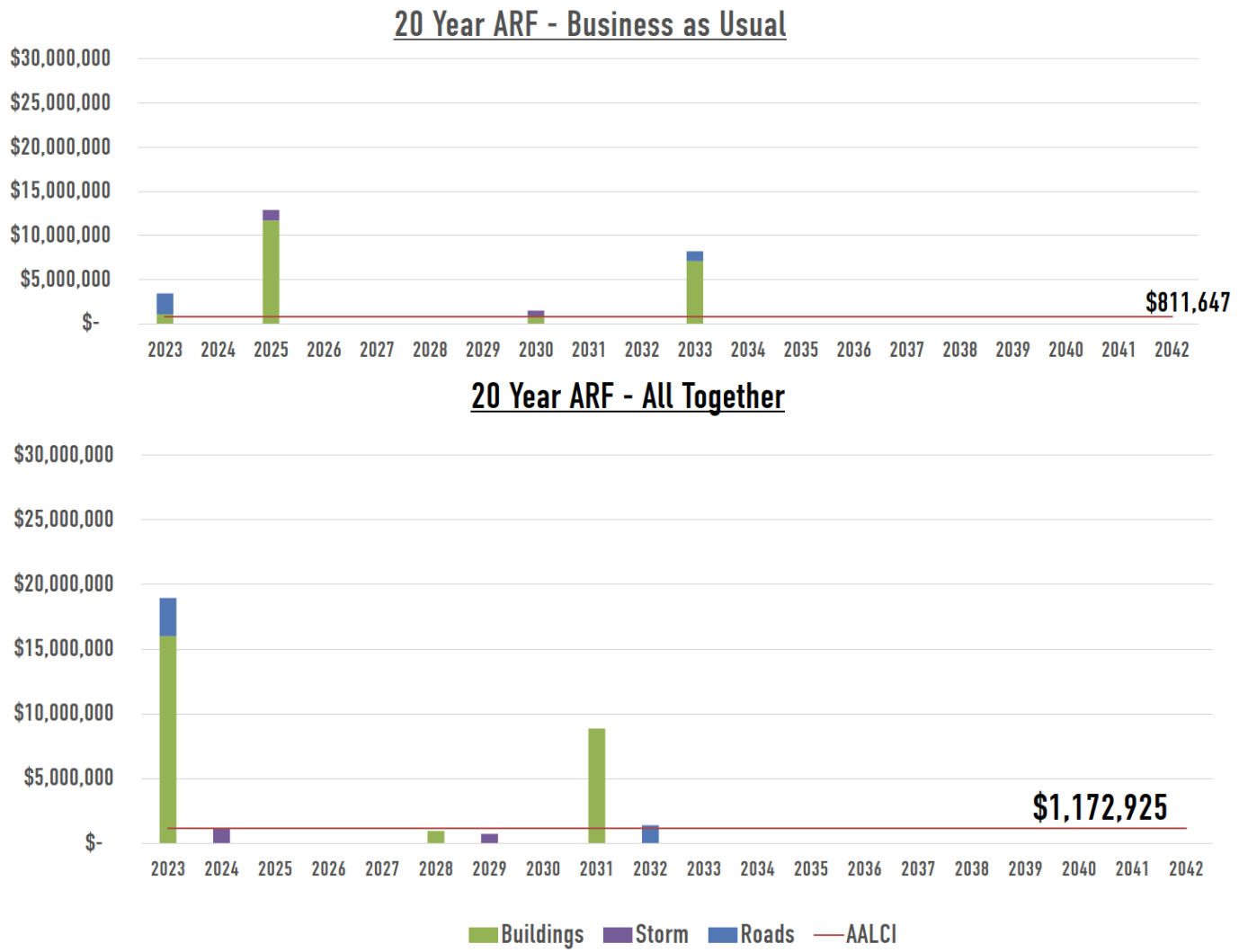
Addition of a $2M dyke

Scenario 3: Including natural assets



Addition of a $6.2M worth of stormwater ponds

Scenario 4: Putting it all together



25% *increase* in building replacement costs

5% *decrease* in building useful life

5% *decrease* in asphalt useful life

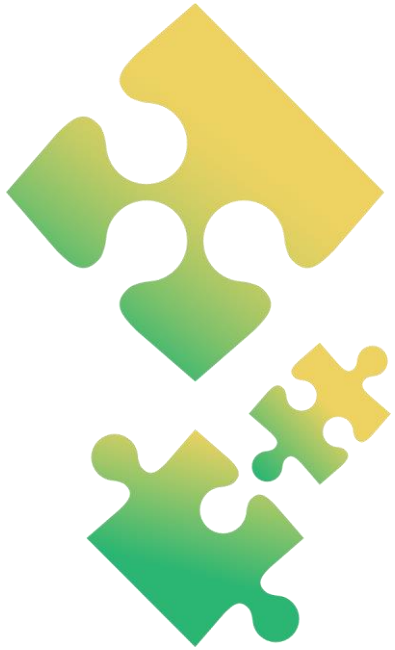
5% *decrease* in culvert useful life

Addition of a $2M dyke

Addition of $6.2M worth of stormwater ponds

Managing Uncertainty with Scenario Evaluation

- Testing our different scenarios allows us to understand how sensitive our analysis is to our assumptions.
- ARFs require a lot of different inputs, introducing climate change exacerbates an already variable process.
- Next activity will help us define parameters, test scenarios, and draw conclusions.



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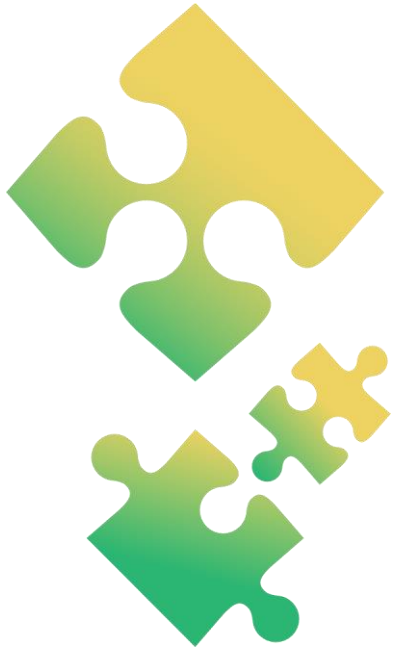


Module C:
Collecting Data – The Application

Where do you get the data you need to consider climate in your LTFP?

- Community specific data
- General assumptions or estimates

This is about understanding sensitivity and scenarios, so the information can be high level.

- Climate action or adaptation plans
- Risk assessments
- Level of service frameworks or statements
- Infrastructure plans

High-Level Information

This is about understanding scenarios and sensitivity, we are not trying to predict the future. High-level information can be found in:

- Climate action or adaptation plans
- Risk assessments
- Level of service frameworks or statements
- Infrastructure plans

Prompts to identify useful information when scenario testing

- Which projects are identified to manage risk, adjust levels of service, decrease GHG emissions/energy consumption?
- What assumptions can be made about other assets that are not covered in your studies or plans?

Median Impacts to Public Infrastructure Assets in a High Emissions Climate Change Scenario (Ontario)

Asset	O&M Cost ($)	Service Life (years)	Retrofit Cost ($)	Renewal Cost ($)
Buildings				
Buildings	+1.2%	-11%	+30.0%	+16.0%
Linear Storm and Wastewater				
Stormwater culverts	+2.5%	0.0%	-	+85.0%
Stormwater ditches	+2.5%	0.0%	-	+74.0%
Stormwater pipes	+5.1%	0.0%	-	+75.0%
Wastewater sanitary force mains	+2.5%	-14.0%	-	+65.0%
Wastewater sewer pipes	+1.6%	0.0%	-	+49.0%
Transportation				
Roads	+1.5%	-31.1%	+25.9%	+25.9%
Bridges	+1.3%	-2.6%	+7.5%	+6.7%
Large structural culverts	+2.5%	-31.3%	+58.9%	+25.1%
Transit engineering	+1.2%	-7.9%	+18.0%	+6.2%
Assumptions: 50th percentile climate projection, using a High Emissions (RCP 8.5) scenario				

Source: *Costing Climate Change Impacts to Public Infrastructure Project*, by Financial Accountability Office of Ontario

Using information from different contexts

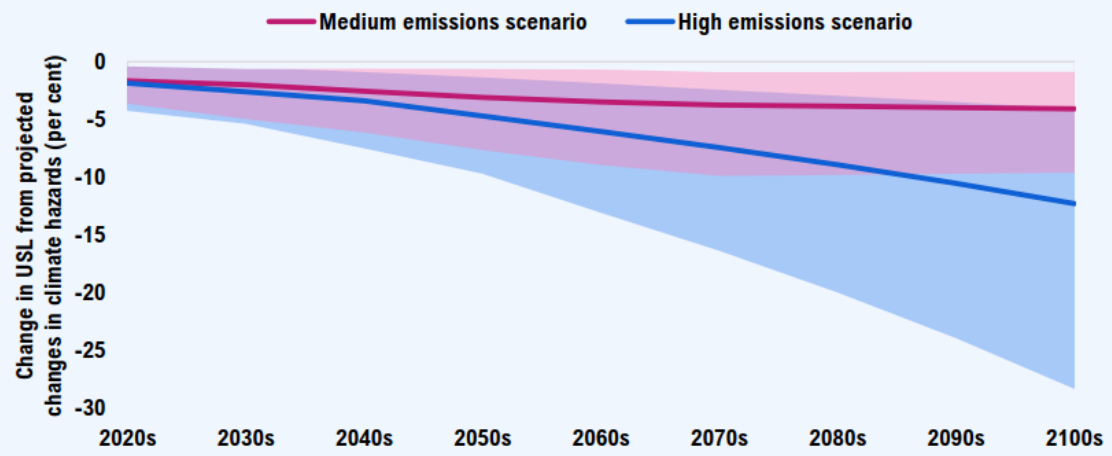
Testing the impacts of climate on your ARF using broad assumptions is better than not including climate at all.

1. Understand assumptions made and how these align with your context.
2. Try out different ranges in your ARF to understand sensitivity.
3. Focus time and effort on improving the accuracy of the data that has the biggest impact on the decision you're making.
4. Update your ARF.

Example: FAO Report

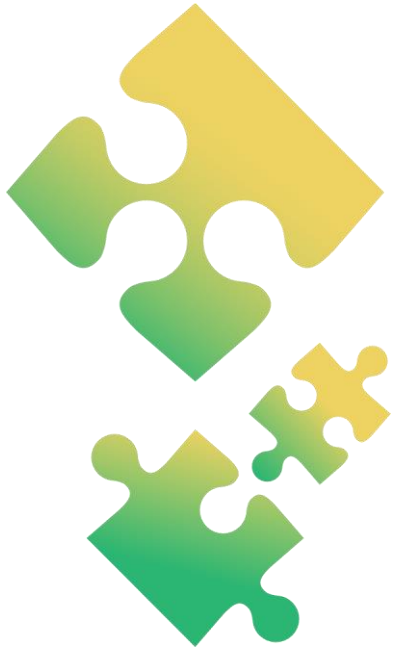
Figure 7-1

The useful service life of public buildings will decline due to projected changes in extreme heat, extreme rainfall and freeze-thaw cycles in the absence of adaptation actions



Note: The solid line is the median (or 50th percentile) climate projection using "most likely" engineering outcomes. The coloured bands represent the range of possible outcomes in each emissions scenario given climate and engineering uncertainty.
Source: WSP and FAO.

- What happens to your asset replacement forecast if you reduce useful life by 10%? 20%? 30%?
- How would this affect financial investment needs to maintain services? Is it dramatically different between 10% and 30%?



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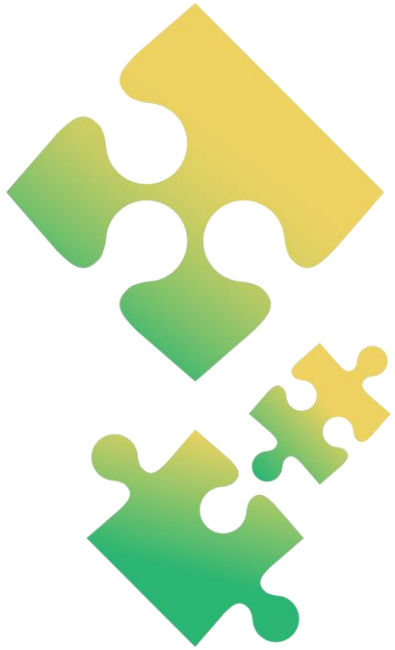

You’ve made it!

Congrats! This concludes Day 1 of Workshop 4.