

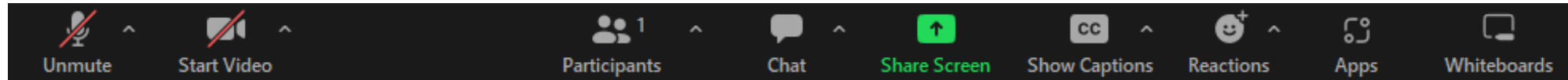
Session 2: Integrating Climate Change and Levels of Service

Tuesday, December 6, 2022



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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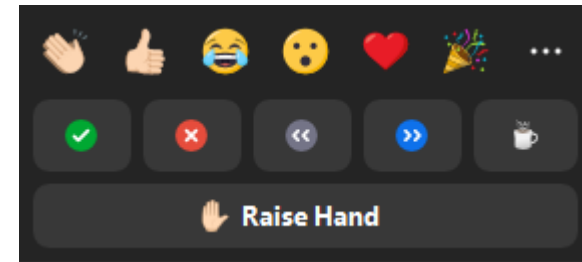
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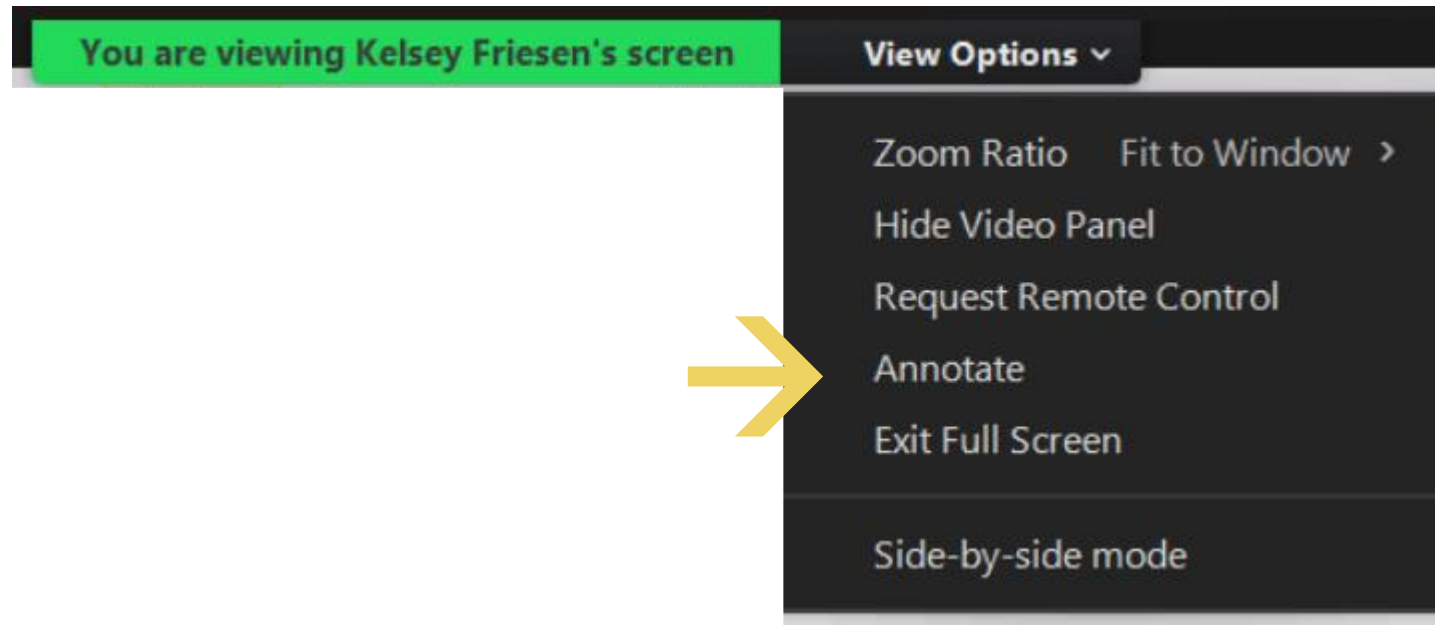
Please Rename –
Name (Community)



Technical Troubles?

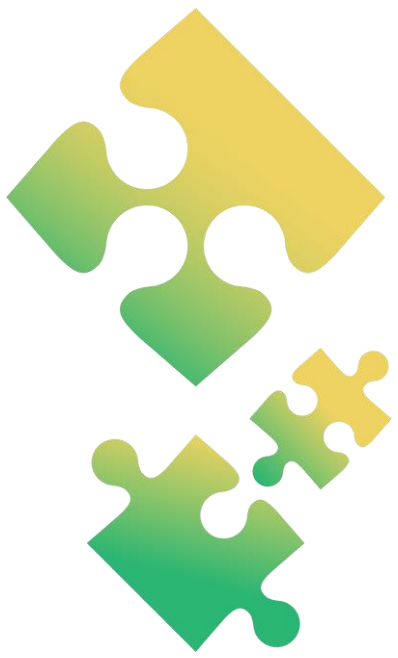
Kelsey Friesen – kfriesen@urbansystems.ca

Zoom Housekeeping - Annotate



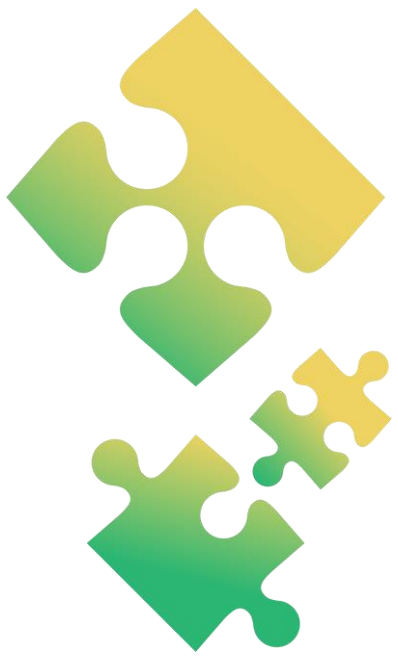
Technical Troubles?

Kelsey Friesen – kfriesen@urbansystems.ca



Welcome!

Bernadette O'Connor, CNAM MAMP Steering Committee



Morning (?) Coffee Break



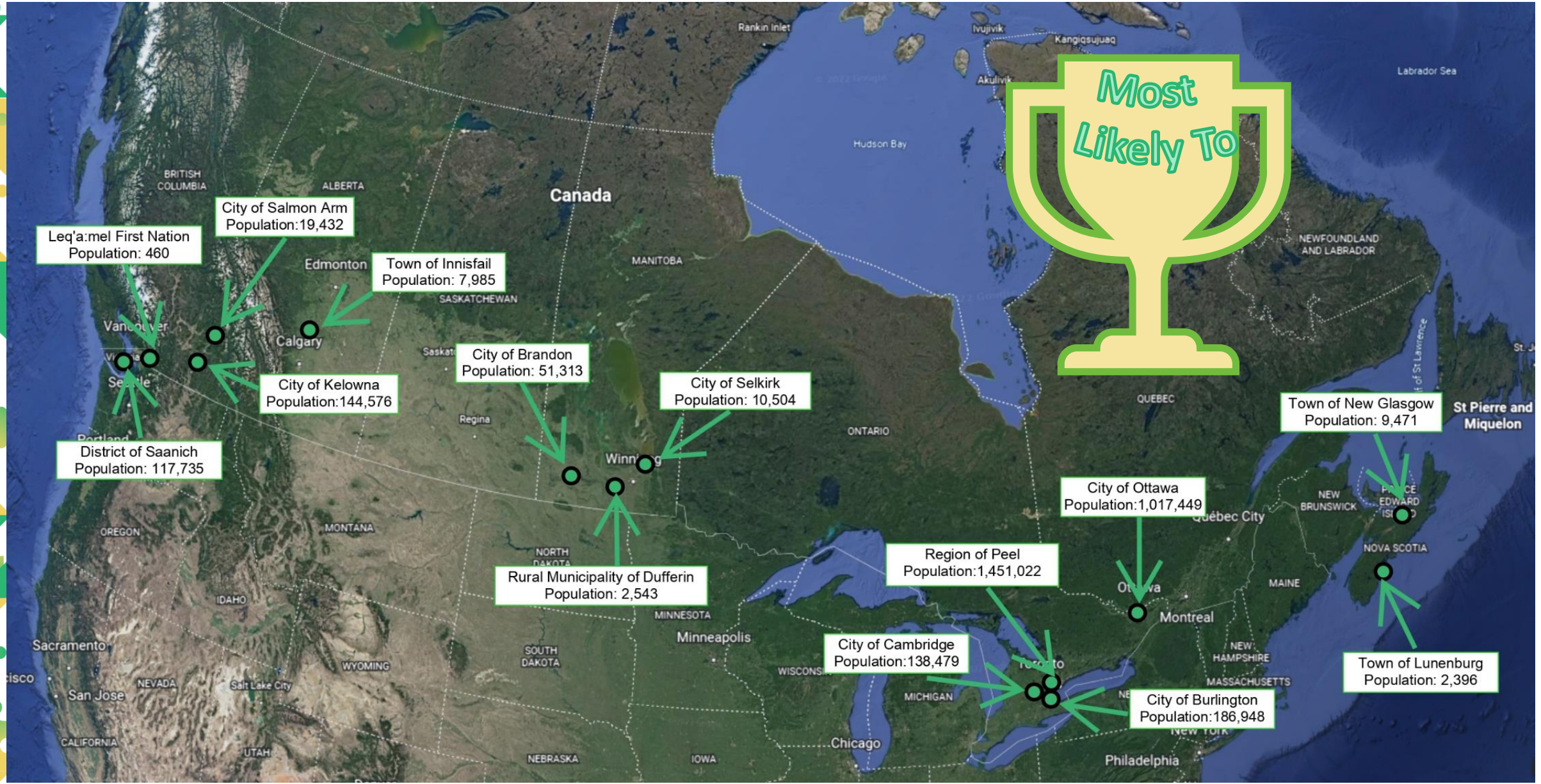
Module A: Introduction and Tone-Setting



LEARNING GOALS:

In this module, facilitators will:

- Share back the common themes from participant check-ins
- Identify commonalities and differences in challenges, approaches, and levels of maturity in asset management and climate change
- Set the stage for participants to engage in this workshop in the way that suits their team and context best



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What's in common

- Lack of funding... how do we pay for this?
 - How will costs change over time?
- When do we have enough information to decide?
- The business case is critical
- Challenges with buy-in



What's different

- Drivers for the why
 - BC: provincial framework for mitigation
 - ON: legislated AM, set to include natural assets by 2025
 - AB, MB, East Coast: hazards! Fires, floods, hurricanes
- Levels of maturity
 - In implementation of asset management
 - In understanding of climate change
 - In integrating the two

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Key Themes from Check-ins

- What are other communities doing?
- How do we integrate climate change considerations with levels of service?
- How do we keep building the case and communicating that to decision-makers?
- ... this is challenging!

Getting the most out of workshops

Facilitators (That's Us!)

- Prepare a program in advance based on feedback provided by participants on what they want to work on
- Provide you a program of suggested “exercises”, “reps”, and modifications for you to participate to your best ability
- Group you with others that are of similar context and/or ability, to learn from your commonalities
- Group you with others that are of different context and/or ability, to learn from your differences
- Provide you with time and space to complete the “exercise” program, while being available for guidance or questions

Getting the most out of workshops

Participants (That's You!)

- Provide feedback on what information is useful or not useful to you
- Learn how to use the resources and tools in these workshops and in your work
- Collaborate with other teams, learn from each other, and be open to the cohort process
- Share learnings from your own experience in asset management and climate action implementation
- Be open to perspectives and contexts different from your own and be prepared to challenge ways of thinking and doing things
- Get to know teams from other municipalities, engage in learning together and from one another and create relationships that can last beyond this training
- Play an active role in determining the best use of tailored check-in support



ACTIVITY Discuss:

What level of effort, intensity and time investment do you think is realistic for your team in making progress on your goals over the next 6-9 months?



(See page 5 of the workbook)

Module B: Adaptive Approach to Complex Problems



LEARNING GOALS:

After completing this module, you will be able to:

- Acknowledge the complexity of advancing in asset management and climate change integration
- Identify basic frameworks for complexity and connect their relevance to asset management and climate change integration



Uncertainties in Asset Management and Climate Change

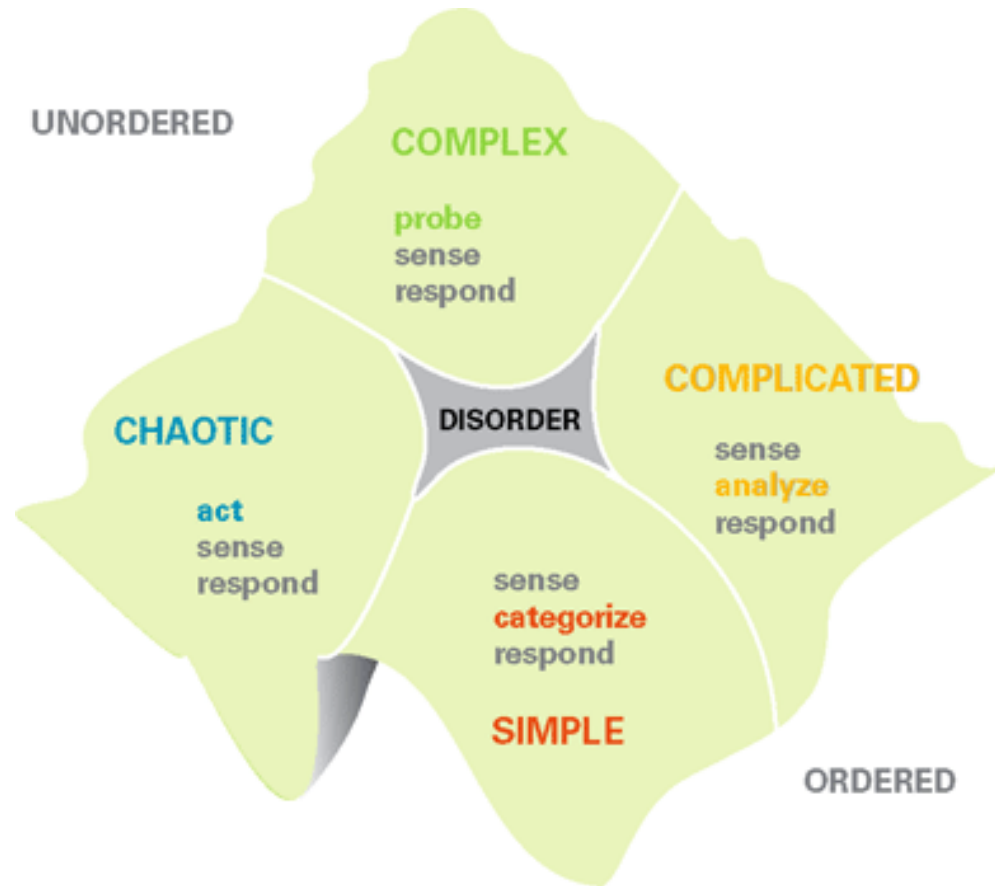
Asset Management

- Continually shifting risk consequences and likelihoods
- Emergence of new services and changes to existing services
- Changes in service demands or usage
- Elected leadership turnover and community priorities
- Rising costs of service delivery
- ... others?

Climate Change

- The future of greenhouse gas reductions or increases
- The impacts of change climate on additional or amplified risks
- Variables and assumptions in modeling of projected climate changes
- ... others?

Identifying Complex Problems



- The Cynefin (ke-niv-en) Framework suggests four contexts of problems
- Simple: the Domain of Best Practice
- Complicated: the Domain of Experts
- Complex: the Domain of Emergence
- Chaotic: the Domain of Rapid Response

Identifying Complex Problems

Integrate asset management and climate change.



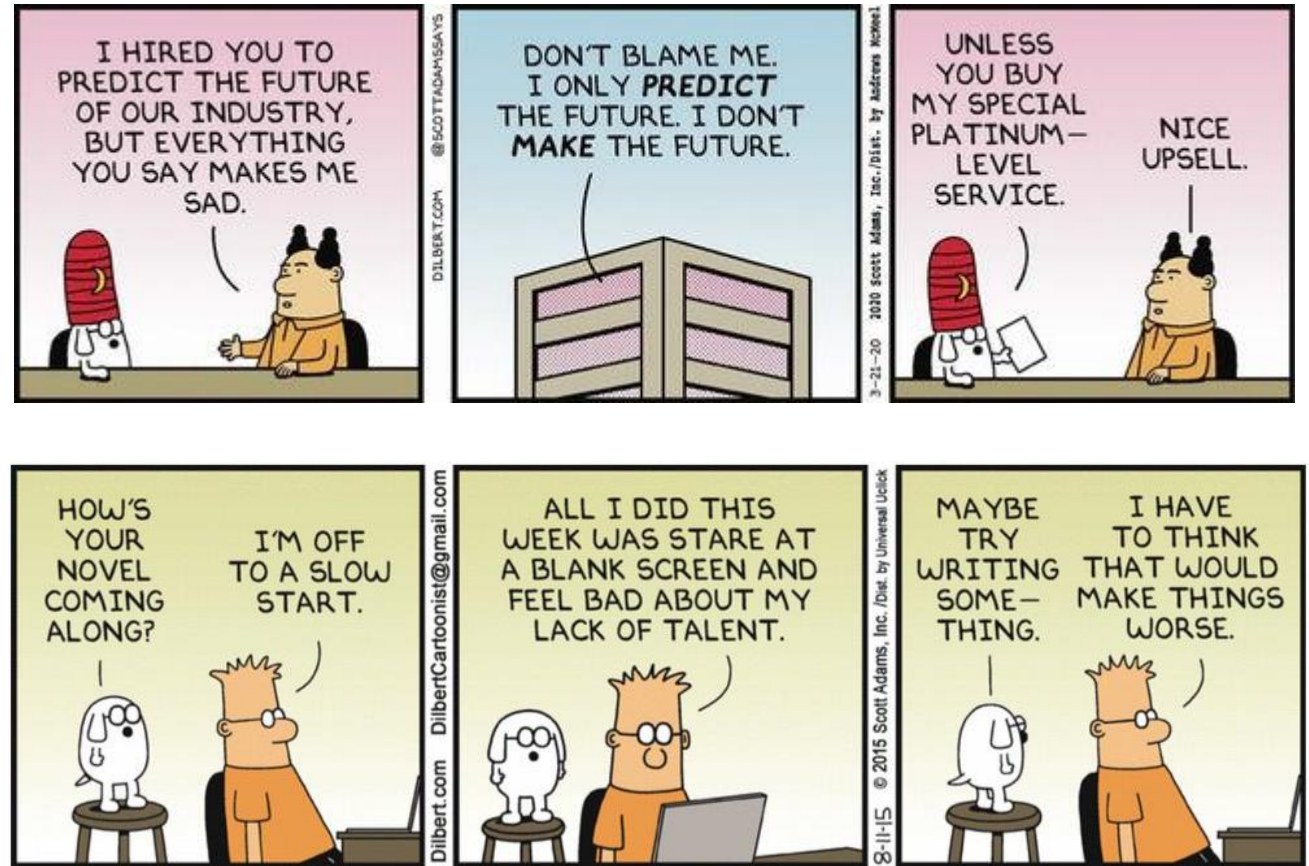
Addressing Complex Problems



Addressing Complex Problems

This is hard because:

- We don't have control over the future
- Trial-and-error can be a hard sell to others
- The path is only apparent *after* you've walked it





An Adaptive Approach to Complexity

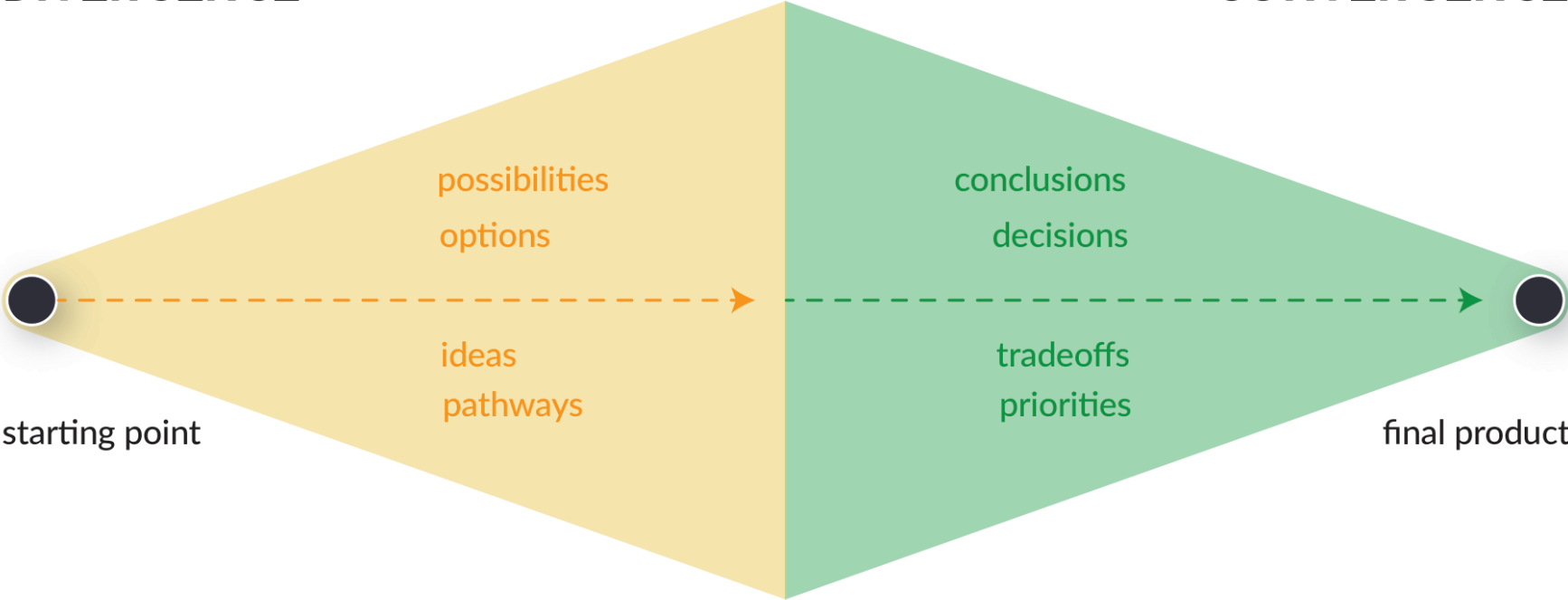
1. Acknowledge that the problem is complex
2. Identify and explore all the things you could do to address the problem
3. Make decisions between all the options to determine what you will do
4. Implement the option
5. Evaluate the outcomes and new information learned through implementation, identify any other information required
6. Go back to step 1 with additional information and a new outlook on the complex problem

... despite this being a step-by-step list, this is NOT a linear process!

An Adaptive Approach to Complexity

DIVERGENCE

CONVERGENCE



Original illustration posted in Building a Second Brain, Creativity, Flow, Workflow on May 16, 2022 by Tiago Forte



Team Resilience Through Complexity

- Adaptive approach takes energy and resolve
- Challenging to bring others along that are not part of process, but are interested in outcomes
- There will always be a “Messy Middle”
 - Next steps are not clear
 - Feels like team has experienced a setback(s)

“The Messy Middle”





The Asset Management *Mindset*

- Asset management is not a problem with a definite solution
- Adopting asset management as a mindset to continual improvement in sustainable service delivery can be helpful



The Asset Management *Mindset*

Asset management as a project	Asset management as a mindset
<ul style="list-style-type: none">• Defined start and end	<ul style="list-style-type: none">• Ongoing process
<ul style="list-style-type: none">• Outcomes are certain	<ul style="list-style-type: none">• Outcomes are information that help to better understand context
<ul style="list-style-type: none">• Singular, with connection to other projects	<ul style="list-style-type: none">• Integral in ongoing organizational decision-making



Module C: Level of Service and Climate Change



LEARNING GOALS:

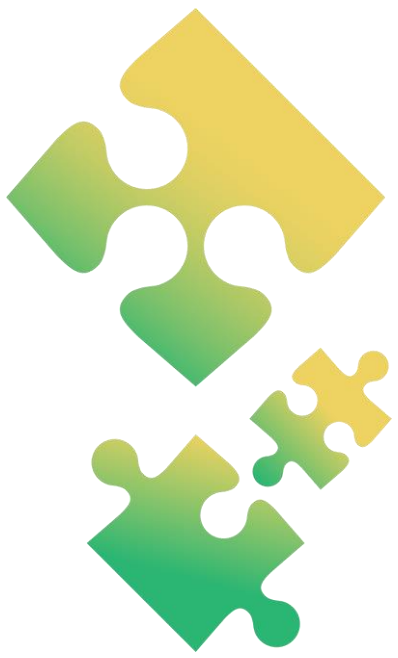
After completing this module, you will be able to:

- Communicate the connection between climate change and level of service
- Identify challenges of integrating climate change and level of service in your context, identify strategies to mitigate challenges



Why Integrate Level of Service and Climate Change?

1. Climate change impacts levels of service
2. Decisions about levels of services will impact climate change
3. Making decisions about levels of service is a process that supports managing the uncertainties of a changing climate



Level of Service 101



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What are Levels of Service?

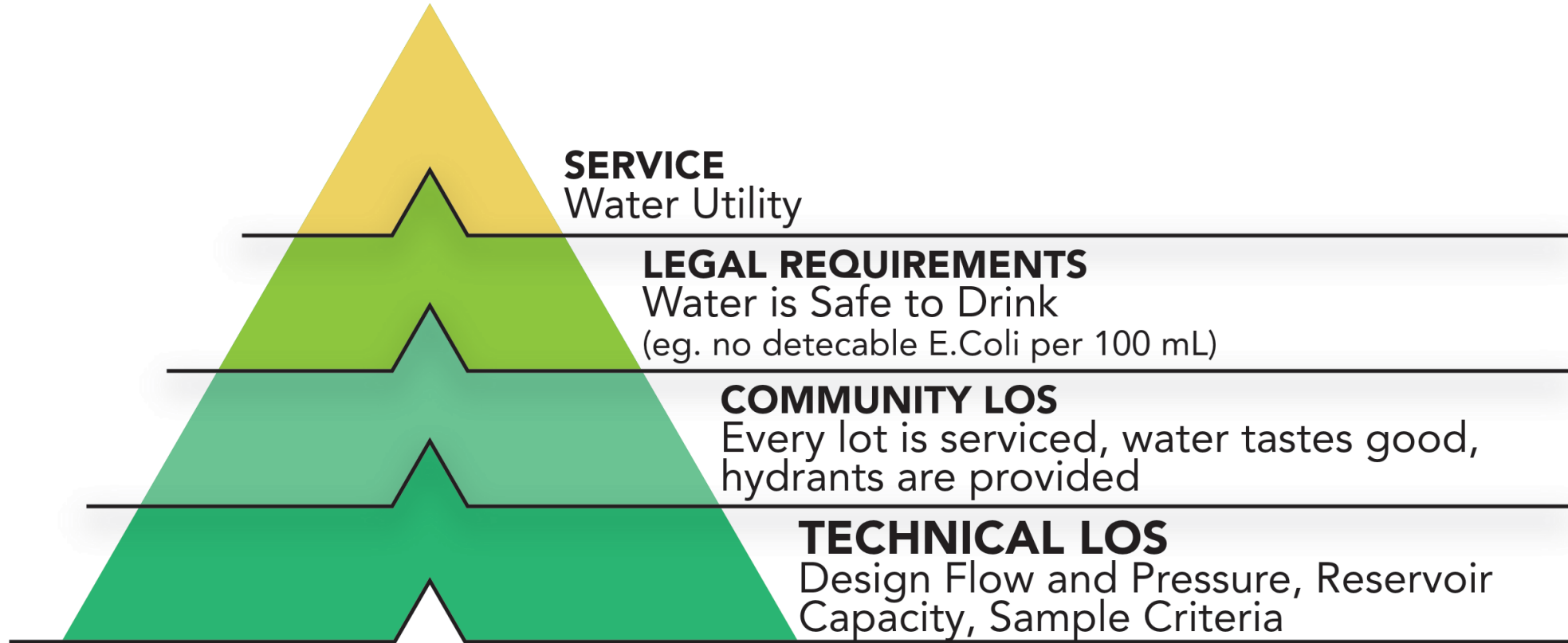
- Specific parameters that describe the extent and quality of services the organization provides to users
- Dictates the need for infrastructure, resources, and costs of providing service



Describing Levels of Service

- **Regulatory** – Does the service comply with applicable laws?
- **Capacity/Availability** – Is there adequate capacity to meet the needs of users?
- **Safety** – Is the system safe for workers and the public?
- **Quality** – Does the service meet quality standards? How good is it?
- **Reliability** – Is the service reliable? How often is it interrupted?
- **Sustainability** – How does the service provide for quality of life, leadership, resource use, natural environment, and resiliency?

Describing Levels of Service



FCM Guide for Integrating Climate Change Considerations into Municipal
Asset Management



Community vs. Technical Level of Service

Community LOS

- Expectations of service outcomes
- Based on what the community values

- Example: Safe, convenient, reliable access to transit to the places people want to go

Technical LOS

- Actions and inputs that result in service outcomes

- Example: transit route schedules and frequency, drivers and other safety staff, frequent revisiting of user satisfaction



Benefits of Understanding Levels of Service

- Staff can seek efficiencies with clear performance targets established
- Members of the community know what to expect and what they are paying for
- You need to be clear about what the community is asking for before you can figure out if you can afford it
- Staff and council can communicate clearly and consistently with the public about what service levels will be provided and why and make aligned decisions
- Knowing where you're at and where you need to be makes it easy to find gaps and correct them
- Projects can be prioritized based on their impact to providing or sustaining service
- Actions such as cutting costs and making investments can be evaluated in terms of their impacts on services
- The consequence of risks can be evaluated in terms of their impacts on services



Level of Service in Northern Climates: An Example

1. How much snowfall must there be on a road before a truck or plow is sent to clear it?
2. Chatstorm: do you think climate change impacts in your region will change your answer?

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Climate Change Impacts on Levels of Service

- Introduces the need for new or changed levels of service
- Changes the context for delivering target levels of service



Climate Hazards and Impacts

- **Land transportation infrastructure:** Softening and rutting of roads due to more frequent heatwaves and a shorter winter ice road season due to warming.
- **Buildings:** Threats to the integrity of building foundations as seasonal temperature increases degrade permafrost, leading to subsidence and buckling.
- **Water supply infrastructure:** Reduced sources of potable water due to greater frequency of drought.
- **Wastewater and stormwater infrastructure:** Overwhelmed drainage and stormwater infrastructure as changing precipitation patterns increase the intensity of heavy downpours and flooding.
- **Marine infrastructure:** Damage to ports and coastal infrastructure as sea levels rise and storm surges increase erosion.
- **Energy and information and communications technology (ICT) infrastructure:** More frequent power outages as winter storms and high winds compromise utility lines and potential overheating of data centres due to increased temperatures and heatwaves.



ACTIVITY Discuss:

Discussion: Consider the examples of climate hazards and impacts on infrastructure assets listed above. What infrastructure impacts are relevant to the services you provide in your community? What level of service does your community value with respect to those services?



(See page 20 of the workbook)



Challenges in Defining Levels of Service

- What are the challenges you're encountering in your organization when it comes to defining levels of service?
 - Getting out of the weeds and focusing on what matters
 - Using LOS in decision-making
 - Data overwhelm
 - Managing uncertainty
 - Other: _____



ACTIVITY

Discuss:

What are the challenges you're encountering in your organization? What are ideas and approaches for managing these challenges?



(See page 21 of the workbook)



Module D: Integrating Climate Change and Level of Service



LEARNING GOALS:

After completing this module, you will be able to:

- Move forward with integrating climate change and level of service in the context of your community



Starting with community levels of service

- Integrating climate change and LOS begins with understanding impacts of climate change on *community* levels of service
- All service areas need baseline understanding of:
 - Current levels of service
 - Climate change impacts to LOS

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Starting with community levels of service

- What impacts of climate change on services do we anticipate?
- Which new services do we need to plan for?
- Where might we need lower or higher LOS to reflect climate change mitigation and adaptation?



Benefits of connecting climate change and community LOS

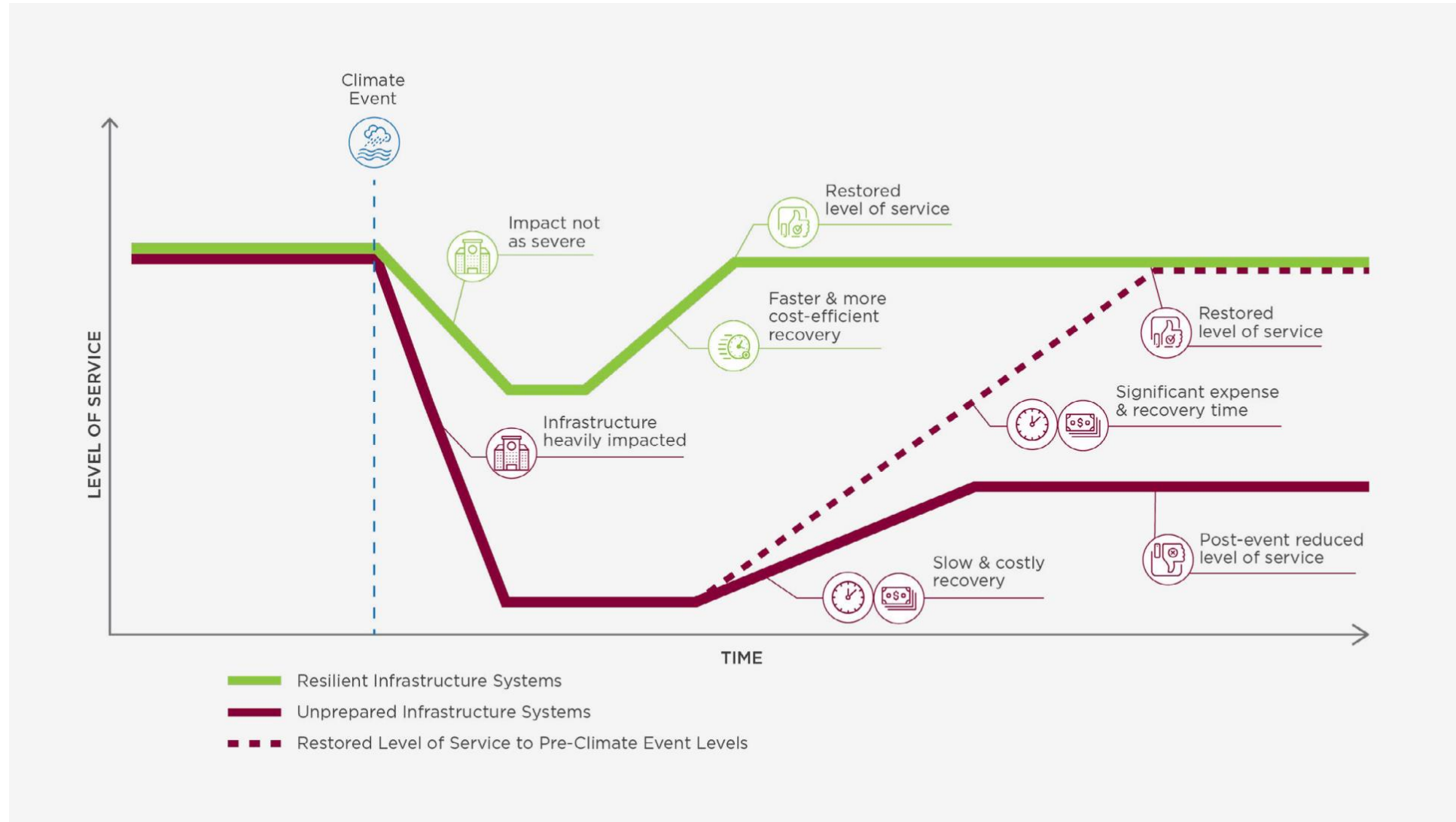
- Minimize jargon, establish common language
- Consistent approach to understanding climate impacts across all services
- Communicate impacts and risks with decision-makers and community members



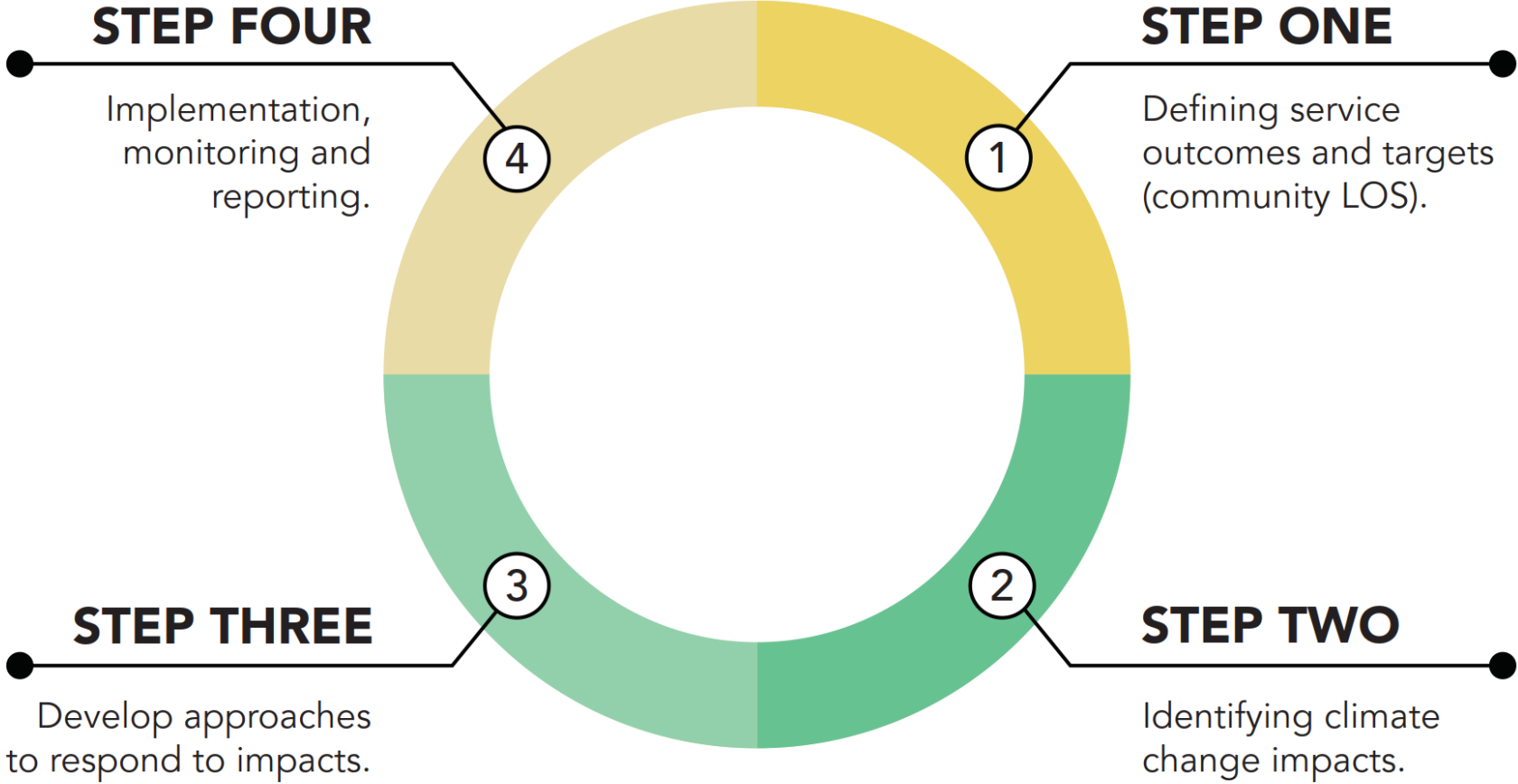
Benefits of connecting climate change and community LOS

- Consider service priorities based on service outcomes rather than inputs or tasks
- Get started even when detailed technical LOS have not yet been defined

RESOURCE - Operations and maintenance for climate resilience: Six strategies for your municipality

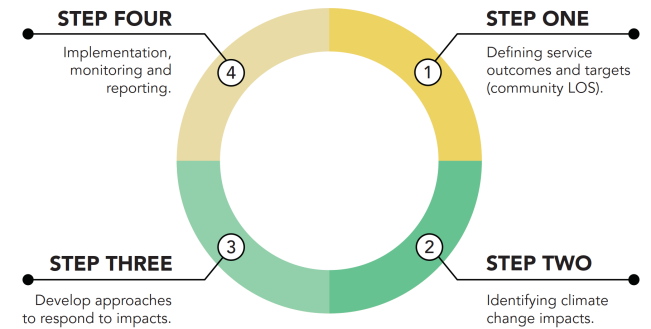


The Process



Step 0: Who?

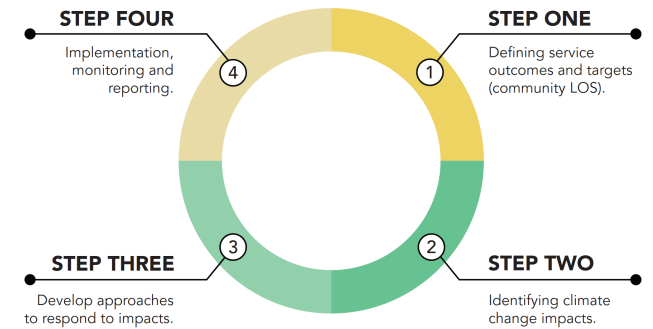
- Who needs to be involved?
- Actions to get started:
 - Work with AM team to identify which steps you'll tackle, and who needs to be there



Step 1: Service Outcomes

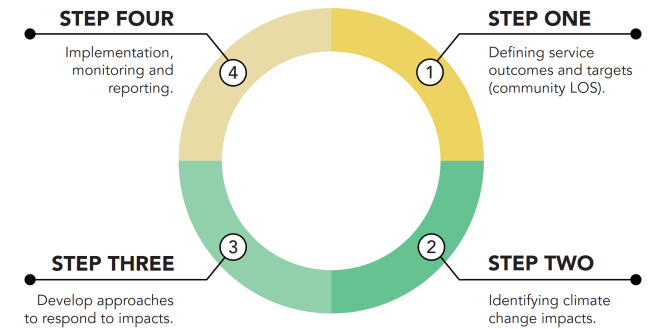
- What are our services?
- What expectations does the community have for these services?
- What are our regulatory requirements?
- What is our current performance compared to regulatory requirements?
- What commitments (LOS targets) can we make?

Focus on what matters most for your community

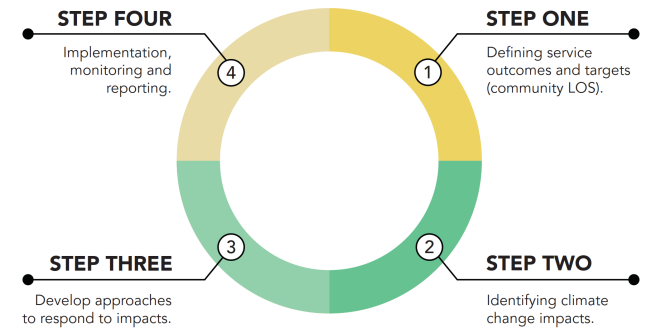


Step 1: Service Outcomes

- Actions to get started
 - Define service areas you'll start with
 - Write down statements that capture community expectations
 - For each statement, identify if your current LOS is below, meeting, or exceeding expectations
 - For each statement, identify what LOS commitment your organization can make



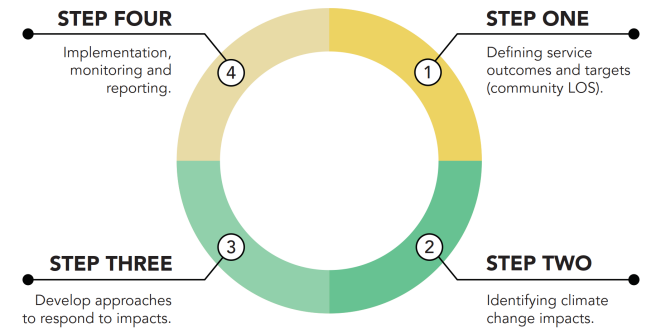
Step 2: Identify Climate Change Impacts



- What is the impact of climate change on our **services**?
- What new LOS will we need to deliver?
- How will our LOS performance change if we continue with the status quo?

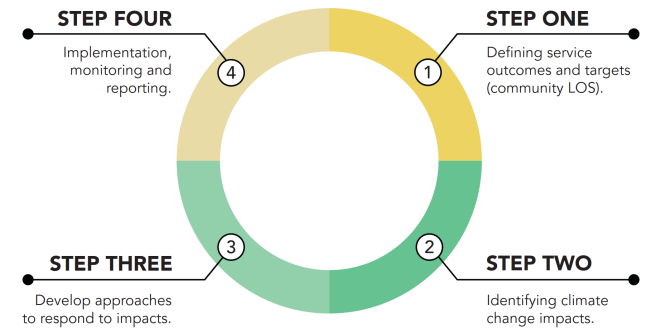
Don't forget about natural assets!

Step 2: Identify Climate Change Impacts



- Actions to get started
 - Identify a source of information for climate projections
 - Review climate projections to understand how temperature and precipitation patterns are expected to change, summarize by season
 - Review each service commitment by season. Identify how changes will impact services.
 - Any new services required?
 - Will expectations on LOS change? Will commitment change?
 - Where will LOS decrease if we do nothing?

Step 2: Identify Climate Change Impacts



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