Levels of Adaptation Strategies

Adapted from the C40 Knowledge Hub

1. Reactive Adaptation (emergency preparedness)

Reactive adaptation fights the immediate consequences of climate hazards, protecting and restoring people's health, quality of life, and city or town systems *during and immediately after* climate-related disasters. Reactive adaptation actions might include, for example:

- A temporary increase in frontline hospital services during a heatwave,
- Laying out sandbags to divert water during a flood,
- Employing an emergency communication system, or
- Temporary water purchasing during a drought.

Reactive adaptation can be rapidly effective in the short term, but the benefits are short-lived. The costs can be high if repeated interventions are needed, and interventions may be insufficient to deal with future climate hazards. Reactive adaptation can be thought of similarly to emergency management or emergency preparedness.

2. Preventative Adaptation (hazard mitigation)

Preventative adaptation reduces the negative consequences of climate hazards, aiming to protect people's health, quality of life, and city or town systems to *avoid* those hazard events becoming disasters. Preventative adaptation actions might include, for example:

- Construction of coastal flood protections,
- Adding energy-efficient air conditioning to community spaces,
- Planting trees or installing green spaces in areas with a lot of pavement,
- Launching educational campaigns related to climate risk, or
- Implementing policies for water conservation.

Preventative adaptation options tend to be relatively expensive in the medium-longer term and may not be sufficient to mitigate the community's

future climate risks. However, they are effective at reducing near-term risk and are often relatively straightforward to plan, as they use well-established methods and technologies. Preventative adaptation in some senses can be thought of similarly to hazard mitigation.

3. Transformative Adaptation (building climate resilience)

Transformative adaptation tackles the root causes of climate risk and vulnerability, making the impact of climate hazards less likely or severe. These actions focus on fundamental changes to how the community is designed or operates to reduce vulnerability both today and in the future. Transformative adaptation actions might include, for example:

- Changing the way streetscapes are designed to include safer and more accessible transportation options while incorporating green infrastructure that reduces heat and the risk of flooding,
- Making living in the community safer and more affordable through expanding and protecting resilient and affordable housing options,
- Using public space for community gardens and food forests that focus on expanding food justice,
- Implementing building codes that require high energy efficiency and cool roofs, or
- Expanding job training or workforce development to build new capacity in climate resilience-related jobs.

Transformative adaptation actions most effectively address climate risk and reduce the need for reactive and preventative measures, with additional benefits for the city or town and its residents. Because the design and implementation of transformative adaptation measures are more complex and require inputs from a wide range of partners, the upfront implementation costs tend to be higher, but they are often the cheaper approach in the long term. Transformative adaptation is also referred to as building climate resilience.

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The definitions above were adapted from the C40 Knowledge Hub. The C40 Knowledge Hub is a resource for municipal governments wanting to act on climate change. The site curates a set of resources, practical information, and tools to support decision-makers. The Knowledge Hub is populated and maintained by the C40 Cities Climate Leadership Group. For more information see: c40knowledgehub.org