



# Climate Change Action Plan

How preparing today for tomorrow's climate challenges is vital for your organization's success.

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## Executive Summary

As evidence grows the earth's climate is progressively changing with serious consequences to the planet and its environment, sentiment in the United States is shifting towards more aggressive action as people see the increased impacts on their daily lives. While individuals with differing ideological leanings contest the source of the problem, more and more Americans are beginning to agree that action needs to be taken to mitigate the environmental impacts<sup>1</sup>. But even with sentiment coalescing on the necessity of action, the enormity of the task and the urgency<sup>2</sup> disorients and overwhelms entities trying to understand how and where to get started. This is particularly troubling, as data suggests what is being done currently is not enough<sup>3</sup> and the world is approaching irreversible conditions.<sup>4</sup>

One of the key motivators to act now has been an increase in erratic weather-induced events and their impacts to our energy systems and our way of life in general. From tornado outbreaks to severe rainstorms to pummeling snow, "unusual" weather is convincing individuals that swift action is needed. Driven by these extremes, some states and businesses have started to conceptualize ways to combat climate change by merely preparing for these outlier events, and few have even developed a comprehensive plan that could be leveraged by others. Generally, all are left to their own devices, however, and also hindered by various social, political, and financial pressures that appear impossible to reconcile. To be successful in tackling climate change then, organizations must methodically and holistically tackle the issues needed to address its negative impacts and ensure it meets the unique needs of the organization or locale.

At McBride Consulting, we therefore strongly advocate for the development of a Climate Action Plan as a requisite preliminary step to prepare for the future. This analysis attempts to provide a replicable roadmap for developing such a plan for both public and private sector organizations to use as they tackle their unique set of climate challenges. Foundationally, it will cover how to conceptualize a plan given the unique realities that entities face and the diverse

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<sup>1</sup> <https://www.pewresearch.org/science/2020/06/23/two-thirds-of-americans-think-government-should-do-more-on-climate/>; It should also be noted the IPCC has recently concluded that human contributions to climate change have only increased: <https://www.cnbc.com/2022/04/05/ipcc-report-charts-detail-climate-change.html>

<sup>2</sup> <https://www.bbc.com/news/science-environment-60984663>; <https://apnews.com/article/asia-pacific-latin-america-middle-east-africa-europe-1d89d5183583718ad4ad311fa2ee7d83>

<sup>3</sup> <https://www.cnbc.com/2022/04/05/ipcc-report-charts-detail-climate-change.html>

<sup>4</sup> <https://www.nytimes.com/2022/02/28/climate/climate-change-ipcc-report.html?referringSource=articleShare>

interests of stakeholders that warrant customized solutions. It will conclude by outlining various strategies to address these social realities and begin pressing the narrative further on how these investments will have real, long-term benefits.

The scientific details associated with affirming the effects of climate change for the purpose of this paper are assumed to be true and accurate. The focus here is on how to approach developing a social and institutional framework to operationalize a climate plan. We will also demonstrate the ways strategies are curated for the unique features of any location. The outcome of a Climate Action Plan then should be a strategic roadmap which has the input and buy-in from a wide variety of stakeholders. It should carefully establish the current state of affairs, identify metrics to track and report progress, and create a working roadmap to preempt, mitigate, and reverse the impacts of climate change.

## Why do you need a Climate Action Plan?

One of the biggest roadblocks for any organization looking to mitigate climate change and reduce greenhouse gas emissions is the breadth of climate change prevention activities. The complexity and scale of climate impacts, as well as the endless strategy recommendations complicate developing solutions in a targeted fashion. Even the lexicon of climate-oriented phenomenon abounds, leaving entities confused. McBride Consulting, therefore, seeks to simplify this topic in an accessible and actionable way.

A Climate Action Plan is a crucial framework to organize a current state analysis, highlight unique locale environmental and topographical features and identify response and mitigation strategies. Before considering the potential strategies to leverage, an entity should understand three pillars that must be addressed to achieve a comprehensive and targeted plan: **Prevention**, **Mitigation** and **Reduction**. Limiting the expansive subject of climate change responsiveness to these three components helps entities compartmentalize its breadth.



Figure 1: Climate Action Three Pillars

- **Prevention:** Prevention focuses on the initial approach of inhibiting climate change impacts before they occur. This includes locations that have not yet encountered these adverse impacts while also developing the infrastructure needed to prepare for what seems inevitable. An example could include reforming building codes to include enhanced base floor elevation requirements in areas adjacent to large water sources that have not historically had severe flooding.
- **Mitigation:** Mitigation focuses on the next stage of climate realities, particularly those that have already experienced adverse effects. This method seeks to adjust course as a means of limiting adverse impacts that have already harmed communities. One example includes the

State of California, which seeks to mitigate the consequences of frequent and more harmful forest fires.

- **Reduction:** Reduction is reflective, seeking to understand the entity in question’s contributions to the troubling climate trends. This focuses on methods and strategies that reduce the emission of greenhouse gases for your immediate and adjacent communities. The use of renewable energy, such as through the installation of solar panels or wind generation elements would reduce greenhouse gases and help ensure the entity is doing its part to advance positive climate outcomes.

## Conceptualizing a Plan

When it comes to the impacts of climate change, the first question to ask is “What is the desired outcome?” The immediate response to the “what” for many might be “fixing climate change,” although it may be unclear as to what that would look like for an entity. Additionally, confronting climate change proves overwhelming in some places, because harmful effects span beyond geographical boundaries, coming from another state, country or across the ocean. To limit our scope, we will focus on a bottom-up analogy such as on a local city and county level. By narrowing the scope, it helps remove climate change anxiety and create a strategic, measurable, and targeted approach.

The next conceptual and practical consideration will concern whether the “desired outcome” is a preventative strategy, a mitigation strategy, a reduction strategy, or a mix of the three. Preventative and mitigation strategies adjust to the expected adverse climate consequences. These may include preventing forest fires with forest management or building seawalls to mitigate the impacts of increasing ocean levels. Reduction strategies aim to reduce the entity’s contributions to climate change, such as adopting strategies to reduce the emissions of greenhouse gases. A mixed strategy may entail activities that address multiple climate goals, such as building with green roofs, which increase energy efficiency (reduction), mitigate the heightened heat levels with better building insulation (mitigation) and allow for an adaptable building as extreme temperature become more prevalent (prevention).

This conceptual framework is important, but to be truly effective it must also be customized for each locale and environment. Starting with a current-state assessment affords the entity an opportunity to review historical data for demographic, topographical, and business conditions and see where the biggest impact points exist and attempt to project the future climate outlook. The National Aeronautics and Space Agency (NASA), for example, attempts to measure the minutest global details, such as anticipating a 13-inch increase in sea levels annually.<sup>5</sup> Organizations, however, also require customizable, accessible, and actionable solutions that speak to their unique circumstances. By looking at the current state of the locality and the different data elements, we then curate the strategies that best meet its needs.

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<sup>5</sup> <https://www.nasa.gov/specials/sea-level-rise-2020/>

## Current State Assessments

Organizations must address their climate change planning needs by first understanding these unique features. Doing so affords a clear sense of their climate strategy needs and the solutions that will alleviate the issues they are experiencing (mitigation) or anticipate confronting (preventative). It also allows them to avoid expending time and resources on solutions that are irrelevant to their locale or organization. For example, a county without significant water-supply should not consider hydropower as an effective climate solution. The following section highlights the three major areas to consider in a current state assessment.

### Demographics and Socio-Economic Factors:

Demographics define the population characteristics of a region and are measured by reviewing trends in areas as such as growth, age, race, and socio-economic factors. It also looks at whether more people are moving to or away from the area, the age composition, or the business concentrations in the region. For example, contemporary trends have shown growth for coastal regions and cities and away from rural areas. Additionally, the US population age is trending to be older. Demographic realities, therefore, elicit real climate strategies in a Climate Action Plan. For example, air quality will affect the elderly and the young differently, air temperature will affect different labor categories, and the density of a region impact how to approach implementing climate solutions with a sufficient scale.

Socio-economic factors also affect the types of jobs that may be available as the climate changes and which industries will survive or become less prevalent. Heavy concentrations of agricultural sectors may require the workforce to migrate to better climates. Industries such as travel and tourism could see abridged windows of opportunity and engagement due to extreme events. Demographic or economic factors also prevent population segments from swiftly evacuating natural disasters, which further require honest assessments of demographic and socio-economic features.<sup>6</sup> Overall then, the combination of who people are, where they live, and what they do for work intersect and serve as impactful factors that must be taken into consideration when assessing climate changes and the development of plans required to adapt and overcome to those changes.

### Topography and Weather Factors:

Topography describes the surface features of a place or region and is measured relative to a position or elevation. This is important because weather factors, such as temperature, wind, and rain effect different topographies differently. Reviewing climate change impacts on topography will entail reviewing the topographical landscape of the entity in question. One obvious example is identifying biomasses that produce damaging methane that can be swiftly removed. A more in-depth example could include a mountainous region that contributes water to adjacent rivers and providing opportunities to develop water-based renewable energy strategies. Similarly, natural wind tunnels<sup>7</sup> could elicit plans to create wind farms, while water sources may prompt a locale to develop hydrology models that measure streamflow, water demand and water temperature<sup>8</sup>.

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<sup>6</sup> <https://climatechange.chicago.gov/climate-impacts/climate-impacts-society>

<sup>7</sup> <https://sciencing.com/landforms-affect-weather-7748364.html>

<sup>8</sup> <https://toolkit.climate.gov/course-lessons/translating-climate-science-hydrology>

The topographical question has drawn significant attention in the last few years but has not provided a full and honest account of one source's (i.e., weather changes) variable impacts on different regions. For example, many have focused on the eastern and southeastern coast of the US as it's been hit by recurring extreme hurricanes leading to devastating floods. This has prompted the call for prevention and mitigation strategies for coastal cities as they appear more susceptible to these disasters. However, many inland regions have been affected by floods due to spring melts or heavy rains that overrun poorly constructed or unprepared drainage systems. Thus, a mitigation strategy cannot limit the scope to surface level external features that may portend to disaster but must also reflexively review the quality of the entity's systems and its preparedness to minimize the ongoing (mitigation) or anticipated (preventative) adverse impacts.

**Economy and Social Factors:**

An important stakeholder in addressing climate change is the business community. In addition to the utility of garnering their support and advocacy for climate change strategies, they are also significantly at risk of suffering deep economic losses if they do not embrace a more proactive posture. These losses include the industry composition of a region, projected growth, and social or environmental factors that lead to higher concentrations of a particular business type. From a reduction standpoint, localities may expect to see businesses within their community using carbon-intensive building technologies or materials and encourage investing in climate resilient, real estate.<sup>9</sup> If there is a mix of industries represented, a state may also seek strategies that span various sectors and effectively achieve a collective outcome. This requires climate education as well (see below concerning "the sale"), as businesses dependent on old technologies may be less willing to make the adjustments that are needed.

It is critical, therefore, that the public and private sectors collaborate to achieve this mutual goal. Private-public partnerships create effective processes to develop infrastructure for public transportation or invest in improved technological facilities for waste management, recycling, or biomass generation power. This will benefit all parties involved, where burdens and successes are shared. To successfully tackle the massive challenge of climate change, evaluating location factors allows entities to save time and resources by selecting the best strategies that align with the realities on the ground. A comprehensive and targeted approach will help accelerate the changes that need to be made. An example of a preliminary current state assessment is provided below in Figure 2.

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<sup>9</sup> <https://www.ft.com/content/7ab0bf0-b37c-463d-b132-0944b6fe8e8b>

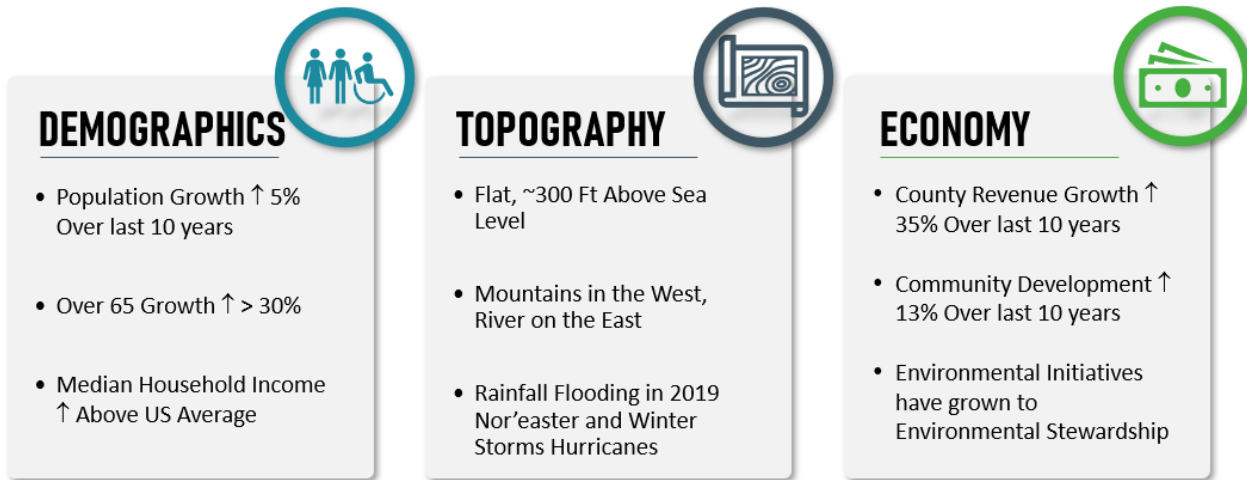


Figure 2: Example Current-Assessment Analysis of McLean, VA

McLean, VA, for example, exhibits above average demographic trends with a growing population that is aging. Topographically, the region is flat, and will likely be affected by regional winter storms and hurricane seasons with the occasional flood. Economically, the area has experienced above US Average Income levels and a growing economy, with, county revenues increasing. As an example, one immediate action would be to review drainage systems and ensure waterflow is uninhibited. Then a review of helpful investments could be made, given the increasing revenues, to protect an older and less agile population can be undertaken.

## Identifying Climate Strategies/List of Climate Activities

Once a current state assessment is performed, with the unique demographic, topographical and socio-economic conditions highlighted, it will be clearer to conceptualize a climate plan and identify strategies that advance climate-friendly outcomes. In other words, the assessment helps narrow the possible strategies to entertain, invest in and ultimately employ. Now, some strategies are agnostic to local conditions, and function as easy pathways to begin transitioning people to a more climate-intentional perspective. However, the assessment will help glean the more cost and time-sensitive strategies that will appeal to the unique compositions of any city, county, or state.

### Low-Hanging Fruit Strategies:

Prior to leveraging the gleanings of the current state assessment, an organization should consider various low hanging fruit strategies to employ. The utilities of these strategies are their proven ability to mitigate climate-negative impacts, have relatively low-cost, limited implementation hurdles and universal applicability. Let's consider two examples. The first entails creating a locale-wide policy to replace lightbulbs with LED bulbs that are longer lasting, cheaper over the product lifecycle and reduce energy emissions. Indeed, "when turned on, an LED uses 90 percent less energy for the same amount of light than an incandescent bulb, and half as much as a compact fluorescent,

without toxic mercury. On top of that, an LED Bulb will last much longer than either type of bulb – twenty-seven years if turned on five hours a day.”<sup>10</sup>

Naturally, practices that have been engrained organizationally have near-term transitional costs that are likely to prompt hesitation on this shift. However, an effective policy change would behaviorally and mentally adjust expectations to ensure the focus is on achieving easy solutions. A more costly, yet hugely impactful, corollary would be requiring future HVAC implementations leverage the more climate-oriented systems. Incentives can be tailored to making the cost burden less severe through tax abatements or subsidies. Ultimately, the goal is active and fiscal consciousness towards shifting to more climate-oriented investments.

The second strategy is the creation and dissemination of obligatory professional training focused on workplace habits that have climate impacts. For example, developing training that promotes behavioral sensitivities to energy waste in the office to avoid leaving lights on when people leave the office. It also highlights unnecessary or injurious electronics to eliminate them from the office entirely. These trainings will be incorporated within regular professional orientations and onboarding, similar to the workplace sexual harassment assessments each employee is required to complete. While the immediate extent of these activities will not significantly reverse adverse climate effects, they will begin behaviorally acclimating individuals and businesses to protective climate postures, thereby making it more palatable for individuals to take steps that anyone is able to adopt at home as well.

## Asset-Type Strategies:

The specific asset concentration of each locale will influence a variety of strategies that could be leveraged. For example, a city or area with high-density, low vegetation, intense sun-exposure and significant concentrations of high-rise buildings could present an opportunity to invest in cool or green roofing to moderate the internal heat increases and thereby minimize the energy consumption load. This is not only considered “eminently doable,” but a solution in which “returns are compelling and long-term costs are comparable, sometimes lower.”<sup>11</sup> Even more, institutions already exist capable of helping cities educate themselves on how to employ these solutions.<sup>12</sup>

Timing related to the locale’s assets is also incredibly important to consider. If there are a significant number of older facilities or buildings at the end of their life cycle with construction needs, preemptive investments in deep energy retrofits will improve insulation and lighting in a fashion that is less disruptive. Similarly, incorporating heat-exchange systems into new building designs will recover heat or cold being ventilated outside.<sup>13</sup> A city, county, or state with high capital improvement needs would be wise to leverage the many strategies at their disposal that will have long-term positive outcomes. These solutions are inherently more cost-intensive and usually disruptive, but if done and timed properly they could minimize each inhibiting factor.

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<sup>10</sup> Drawdown, 92.

<sup>11</sup> Ibid., 90-91

<sup>12</sup> <https://greenroofs.org/>

<sup>13</sup> Drawdown, 95.



It is also important to consider the systems and equipment embedded within assets. For example, reviewing a location’s HVAC composition and usage elicit valuable investment opportunities in a massive energy consumption environment: “The building sector worldwide uses approximately 32 percent of all energy generated; more than one-third of that is for heating and cooling.”<sup>14</sup> Smart thermostats – no longer considered sophisticated technologies by any means – will automatically adjust temperatures responsive to conditions outside and heat-pumps are leveraged to moderate temperatures indoors and reduce reliance on less climate-positive systems. This provides a valuable example for a public-private partnership opportunity. A city in need of HVAC reform would do well to consider communicating with manufacturers for a large purchase-order that will appeal to the manufacturer while reducing the individual costs of each device.

A final example includes mobile assets. A location with limited electric vehicle ownership would do well to invest in charging stations both in their immediate environment and in adjacent areas. The goal here would be to make the prospect of purchasing and using an electric vehicle less inhibitive. Research from China has shown that the two greatest consumer reservations with shifting to EV is accessibility of charging stations and their battery capacity.<sup>15</sup> Wide-reaching charging stations would reduce concerns and prompt large-scale investments that could help mitigate vehicular emissions. A topographical assessment would do well here, as entities consider how best to position fewer charging stations to avoid over-investment while strategically ensuring extended vehicular range. This would also take advantage of recent promising indicators that the costs of renewable energy sources and EV batteries is decreasing.<sup>16</sup>

### **Environmental and Topographical Strategies:**

Taking into account environmental and topographical factors will also contribute to the development of strategies that entities employ. Locales with access to significant water currents, for example, would do well to consider renewable energy solutions such as hydropower. Like many strategies, the upfront cost-investments are currently high, but the long-term financial savings and reduction to adverse impacts to the climate would be significant. This same logic applies to areas with wide-swaths of open land that are friendly to wind-turbines.<sup>17</sup> Similarly, coastal areas or those with large bodies of water could leverage off-shore wind solutions that are less intrusive to land-based projects and utilize unused spaces. Locations would do well to leverage this precedent of success in adjacent areas to tap their knowledge and experience investing in these solutions.<sup>18</sup> Texas, Iowa, Oklahoma, Kansas, and Illinois present fantastic examples where high concentrations of wind-turbines are being used with great success.

An added feature of the solutions just listed is the awareness of weather trends. If a location has limited weather variability (think Hawaii, for example), investments in discretionary and one-time

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<sup>14</sup> Ibid

<sup>15</sup> <https://www.statista.com/statistics/1028623/china-main-obstacles-for-purchasing-an-electric-car/>

<sup>16</sup> <https://www.cnbc.com/2022/04/05/ipcc-report-charts-detail-climate-change.html>

<sup>17</sup> On March 29<sup>th</sup>, for the first time, wind turbines became the second highest source of energy behind natural gas (surpassing nuclear and coal). See <https://qz.com/2155659/wind-surpassed-nuclear-power-output-in-the-us-for-the-first-time/#:~:text=On%20March%2029%2C%20wind%20became,trailing%20far%20behind%20natural%20gas>); It is also one of the most effective in reducing emissions: <https://www.ipcc.ch/report/ar6/wg3/figures/summary-for-policy-makers/figure-spm-7/>

<sup>18</sup> <https://eerscmap.usgs.gov/uswtdb/>

systems in case of unexpected extreme alterations would be wise and mitigate wasteful systems. In other words, systems that store energy when needed, rather than those that expend it continuously, would be prudent shifts. Those with far more severe weather variability would do well to have more responsive and continuous systems to capture the increased heating or cooling scenarios. Some of the tools discussed above, like smart thermostats, should be incorporated into both new building designs and preexisting structures. Insulation strategies can be developed and implemented since they present “one of the most practical and cost-effective ways to make buildings more energy efficient – both in new construction and through retrofitting older buildings that often are not well encased.”<sup>19</sup>

One final example from the many available includes considerations related to sun-exposure. Those open spaces provide opportunities for solar energy solutions and depending on the level of investment and expansiveness of the area, developing solar farms will provide clean, renewable energy that is financially expedient in the long-term.<sup>20</sup> Again, the upfront cost may be high, but a futuristic outlook helps present a holistic and more contextual understanding of the benefits or shortcomings of any investment, climate or otherwise.

## The "Sale"

Any climate plan must develop marketing content that speaks to the long-term benefits of adoption and investment. This campaign should account for the various stakeholders that will either approve the actualization of an investment or strategy, or those that account for significant assets that require efficiency overhauls. The “sale” should account for at least four components:



Figure 3: The Climate Sale

1. **Long-term direct cost savings** – Perhaps the most difficult issue when advancing climate-friendly activity adoption or investment is perceived cost. This barrier is rooted in a short-

<sup>19</sup> Drawdown, 101.

<sup>20</sup> See a recent effort performed by California to leverage solar energy by employing a mandate model:

<https://www.nytimes.com/2021/08/11/business/energy-environment/california-solar-mandates.html?referringSource=articleShare>

sighted view of an investment that not only misrepresents the true benefits of the climate strategies, but also neglects the real benefits in question. To articulate these benefits in the language of both governmental and commercial stakeholders, it is important to quantify and showcase the long-term financial benefits of these solutions.

2. **Long-term indirect cost savings** – While long-term cost savings are critical, they are not exhaustive. A marketing campaign should highlight indirect cost savings associated with employing a climate strategy. One example includes the cost savings associated with minimizing extreme weather events. While the savings will likely not appear immediate or predictable, they still account for significant cost-savings if probabilistically evaluated. An analogy of this type of thing is linked to the cyber security arena – companies regularly invest in expensive cyber protections that are costly and don’t present immediate revenue accretive or clear cost-minimizing outcomes. They do this, of course, to account for the potential damage that materializes if a cyber intrusion occurs on their networks because the long-term costs of recovery are higher than the initial prevention measures.
3. **Intangible savings** – Climate consciousness has unintended and intangible benefits that are difficult to measure. For example, clients or prospective employees that insist on certain climate standards being met are now available to a more climate-conscious entity. Investments such as these will attract burgeoning industries within the climate-friendly market to situate their workforce or new investments in the locale in question.
4. **Precedent of Success** – One final component of the marketing campaign should highlight examples of success to make the appeal accessible. Endless examples exist globally for countries, states, counties, and cities that have made significant investments and achieved commensurate success. The broad acclaim and the types of savings these entities experienced should further validate the prior arguments and make any hesitation by the stakeholder counterintuitive.

## Conclusion

In this analysis, we have outlined McBride Consulting’s approach to developing a climate action plan. This framework is meant to be accessible and account for any entity’s needs. In a subsequent paper, McBride Consulting will conduct a case study of how this framework can be implemented in a real-life scenario. While McBride Consulting believes a comprehensive approach should contain prevention, mitigation and reduction elements, organizations that act reflexively with a current-state assessment and leverage the insights gleaned from it to research and develop relevant and customizable solutions will witness noticeable results. Beyond functioning as a good steward for our shared environment, it also employs strategic and cost-efficient solutions that enhance resiliency for both it and the broader community.



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