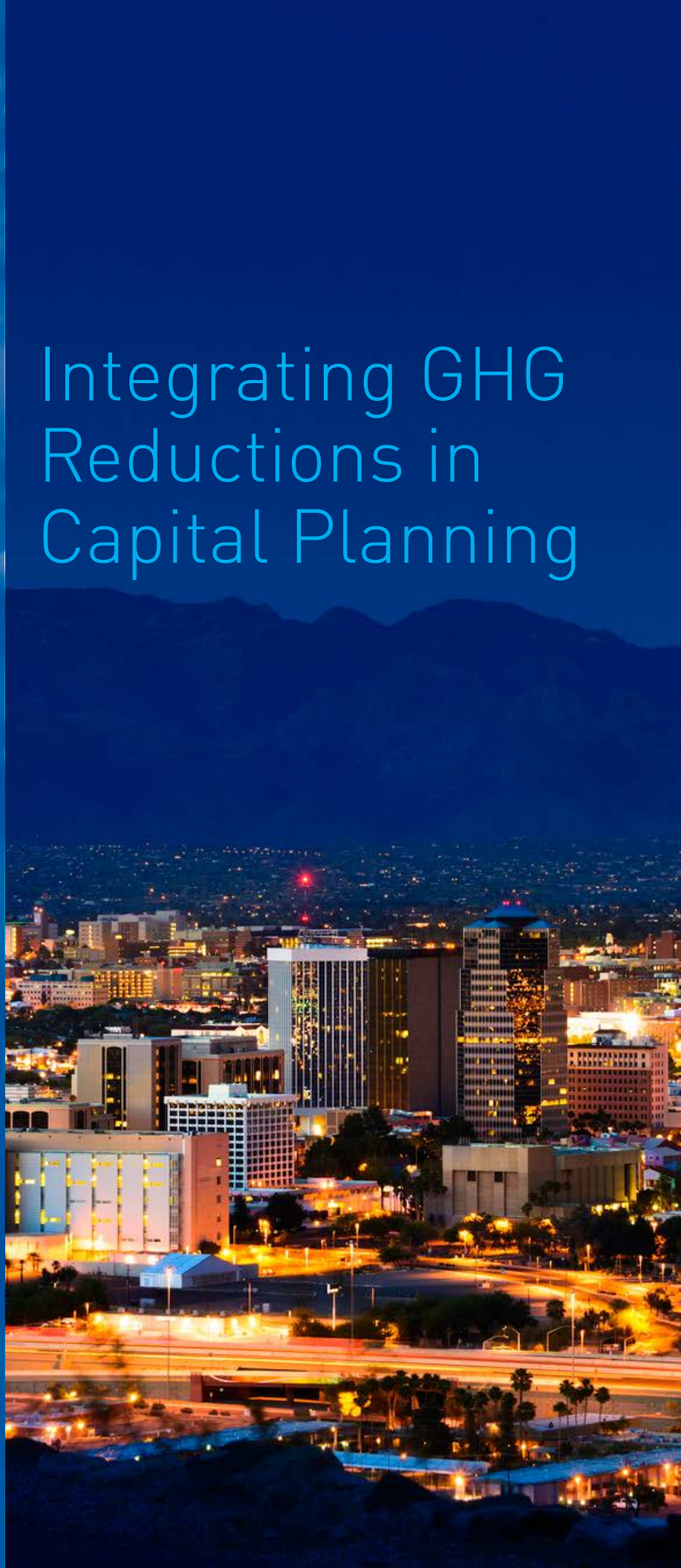
# Integrating GHG Reductions in Capital Planning



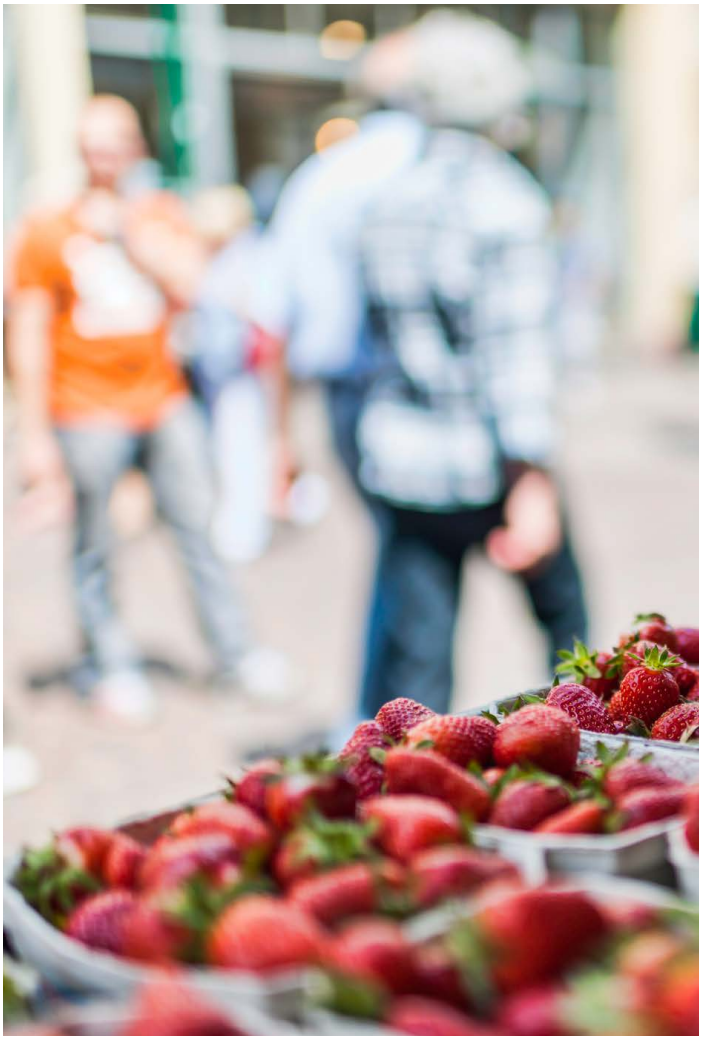
# KEY TAKEAWAYS

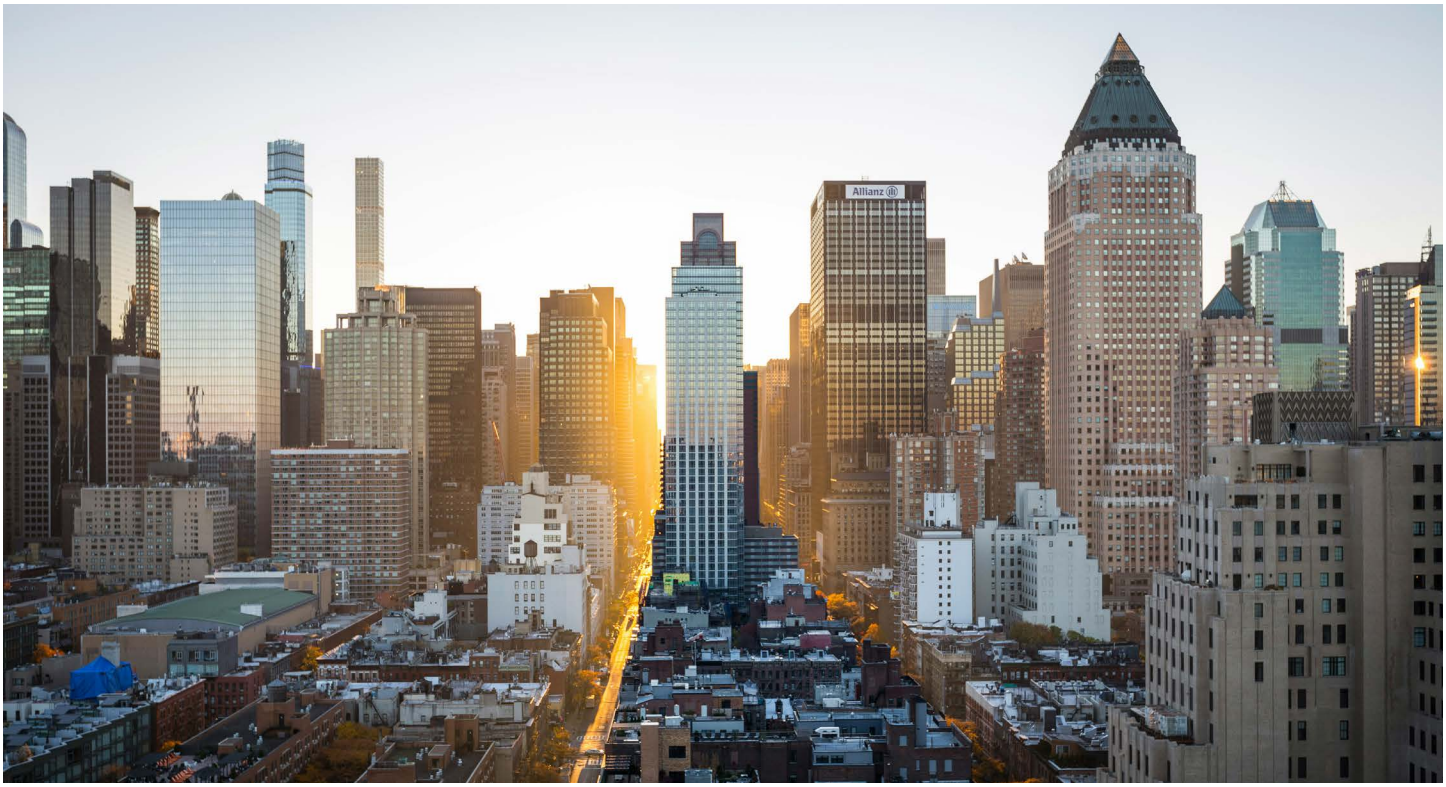
- Treat outreach as an ongoing relationship—engage early, communicate often, and keep listening.
- Position the utility as a regional leader that can pool resources and know-how and convene partnerships to deliver climate solutions at scale.
- Identify and involve all relevant players—including smaller or less visible groups—to ensure broad support and fewer surprises down the road.
- Focus climate investments on projects that not only cut emissions but also improve air quality, boost resilience, and solve real problems for the communities you serve.
- Cross-sector collaboration is key to scaling impact. Set clear expectations from the start to avoid confusion and get more done faster.

# INTRODUCTION

Integrating greenhouse gas (GHG) reduction goals into financial and capital planning is crucial for achieving long-term climate objectives. Financial planning sets resource allocation priorities, while capital planning translates these priorities into infrastructure and technology investments. By embedding GHG considerations in both processes, utilities can meet emissions targets, strengthen financial sustainability, and advance broader organizational and community goals.

Achieving these outcomes requires embedding climate targets throughout routine business practices. This entails evaluating proposed investments with a climate lens, aligning financial priorities with sustainability objectives, and establishing internal processes for consistent application. Ensuring equity and environmental justice delivers inclusive benefits, while cross-departmental collaboration and stakeholder engagement build cohesive strategies aligned with local, regional, and state policies.





# ACTIVITIES AND ACTIONS

The following sections address how to evaluate capital investments, align planning with long-term climate goals, advance equity, build internal capacity, and foster collaboration—each essential for achieving meaningful emissions reductions and broader organizational success.

## Evaluating Capital Investments Through a Climate Lens

***Tip:*** *Develop a climate-impact scorecard to evaluate both the embodied and operational GHG footprint of each investment, ensuring you capture the full lifecycle impact before final project approval.*

Evaluating potential investments through a climate lens is crucial for reducing GHG emissions. This includes assessing each project's emissions impact—covering both embodied carbon (e.g., materials, construction processes) and operational emissions—and prioritizing those that align with established net-zero targets. Financial performance, operational efficiency, and readiness for low-carbon technologies also guide decision-making.

Incorporating the social cost of carbon into return-on-investment (ROI) calculations accounts for broader societal impacts, while lifecycle emissions analyses encourage forward-thinking solutions that reduce the risk of locking in high emissions over time. Examples of climate-aligned investments include renewable energy infrastructure, energy-efficient equipment, and fleet electrification—all of which simultaneously cut emissions and enhance operational performance.

## Aligning Capital Planning with Long-Term Climate Goals

***Tip:*** *Incorporate annual checkpoints to review how well capital projects align with current climate targets, and adjust spending or timelines as needed.*

Financial and capital planning must align with long-term, net-zero climate goals to effectively reduce emissions. This means integrating GHG reduction targets into every stage of the planning process—from budgeting to project selection and design—and ensuring each major investment supports the utility's net-zero trajectory. Financial planning provides the fiscal foundation for climate-focused priorities, while capital planning converts these priorities into infrastructure and technology investments.

Strategic alignment helps utilities avoid stranded assets by evaluating transition risks (e.g., carbon regulations and market shifts) and dedicating budgets to sustainable projects. Tools like green bonds and carbon credits can expand financing options, and regenerative approaches further ensure that investments yield social, ecological, and economic co-benefits.

## Integrating Equity and Environmental Justice into Capital Planning

***Tip:*** *Host community climate forums to gather input on major capital projects, ensuring solutions are inclusive, equitable, and aligned with local climate and resilience goals.*

Equity and environmental justice must remain central to capital planning so that new infrastructure investments benefit all communities and avoid disproportionate burdens on vulnerable populations. Utilities should prioritize projects that expand clean energy access and address historical inequities, engaging directly with communities early in the planning process. Nature-based solutions—such as green infrastructure or habitat restoration—can provide additional benefits, enhancing local well-being while reducing emissions.

## Building Internal Capacity and Processes

***Tip:*** Create a living repository of resources—templates, guidelines, and data—so staff can easily access up-to-date information and best practices for climate-focused decision-making.

Aligning financial and capital planning with net-zero

goals demands clear internal processes and robust capacity-building. Utilities should establish cross-functional teams to coordinate climate-related objectives and develop standardized tools—such as climate impact assessments or carbon cost analyses—to guide investment decisions. Clearly defined roles and responsibilities ensure these methods are consistently applied, and regular training keeps staff up to date on emerging technologies, regulations, and stakeholder expectations.

By routinely reviewing and updating procedures to reflect new regulations, technological advances, and market shifts, utilities maintain agility and keep pace with evolving net-zero targets.

## Institutionalizing Carbon Reduction in Decision Making

The assessment of alternatives in the design and construction processes governs the success of meeting carbon goals. Considering the impacts of carbon in project decision-making will ensure that goals set early in the planning process will be met with the final project outcome.  Projects with assessments at regular milestones will keep the project aligned with programmatic goals.

## Collaboration and Stakeholder Engagement

***Tip:*** *Publish a quarterly climate progress update—whether as a concise newsletter or dashboard—to keep all stakeholders (internal teams, government agencies, and community members) informed about key milestones, funding opportunities, and emissions data.*

Collaboration and engagement are vital for successful climate-aligned capital planning. Cross-departmental coordination ensures GHG reduction considerations factor into each planning step, while external stakeholders (government agencies, private organizations, and communities) can help expand financing options, share expertise, and keep projects aligned with local priorities. Transparent reporting on capital decisions and GHG progress builds trust, fosters accountability, and demonstrates leadership.

# KEY CHALLENGES AND SOLUTIONS

Integrating GHG reductions into capital planning can be complex, requiring continuous attention throughout the planning cycle. Below are three common challenges and potential solutions.

## Balancing Financial Consideration with Climate Goals

Investments that prioritize emissions reductions may entail higher upfront costs, with returns realized over a longer time horizon. Demonstrating a robust business case helps ensure leadership buy-in and stakeholder support.

**Solutions:**

- Use lifecycle cost analysis to highlight long-term operational savings
- Factor in carbon pricing, regulatory changes, and reputational benefits to build a more comprehensive view of ROI.
- Establish a dedicated budget for emissions-reduction initiatives to ensure these projects aren't sidelined by short-term cost pressures
- Bundle smaller climate-aligned projects into one larger initiative to share costs and expedite implementation.

## Securing Funding for Climate-Aligned Projects

Financing climate-focused capital projects can be challenging, especially when immediate returns are not evident. Ensuring adequate funding sources and incentives is key.

**Solutions:**

- Pursue grants, low-interest loans, and incentive programs that specifically target clean energy and emissions-reduction measures.
- Explore innovative financing approaches such as green bonds, carbon credits, or public-private partnerships.
- Leverage partnerships with NGOs or governmental agencies for co-investment opportunities and resource sharing.

## Avoiding Lock-In of High-Carbon Assets

Committing to major infrastructure projects without fully accounting for future climate policies and market shifts can lead to stranded assets and financial liabilities. Implementing flexible, forward-looking approaches is key.

**Solutions:**

- Adopt a forward-looking approach that evaluates proposed projects against evolving regulations and climate targets.
- Prioritize flexible solutions that can adapt to faster-than-expected technological changes.

UTILITY SPOTLIGHT

# New York City Department of Environmental Protection—Capital Planning is Climate Planning

While climate planning may be its own discipline at many other utilities, the New York City Department of Environmental Protection (NYC DEP) has found that integrating climate planning into the capital improvement process results in real impacts for financial and capital planning and project implementation. By aligning investments with long-term climate targets, engaging with stakeholders, and taking a forward-looking approach to evaluate potential projects, NYC DEP can prioritize renewable energy infrastructure, energy efficiency, and community resilience projects, ultimately enhancing sustainability and financial performance.

## Tying Big Goals to Individual Projects

Sustainability and GHG considerations are embedded into every stage of capital project planning at NYC DEP. From the initial design charette through detailed design and into construction, the agency ensures that energy usage and carbon profiles align with citywide goals. This includes:

- Developing a carbon profile for the project with achievable carbon budget targets to evaluate potential investments with a climate lens and align individual projects to larger greenhouse gas reduction goals
- Leveraging a bottom-up calculation of carbon as design progresses
- Developing construction submittals that include specific call-outs for embodied carbon

> *"Sustainability implementation is a contact sport" is how Dennis Stanford, Deputy Director of Engineering Services, describes the purpose of consolidating climate and capital planning. "The starting point for each of our projects is to assume that our ambitious sustainability and GHG goals will be met. This engages the design engineers; when the design requirement is to realize goals or prove that they can't be achieved, engineers will always try to find a solution. Goals for the agency are set against infrastructure, but our infrastructure is assembled through hundreds of individual capital projects that continuously add to, upgrade, or repair our existing system. The only way we can meet our goals on a large scale is to look at each individual project and maximize its contributions to those goals."*

Key Insight: NYC DEP's internal processes have increased its capacity to reach long-term goals throughout the project lifecycle by embedding carbon assessments into typical design and construction stage gates.

## Empowering Project Managers Beyond Scope/Schedule/Budget

Since 2012, project managers have undergone an internal project management certification course that includes a sustainability module. This is coupled with regular review and publication of operating procedures that include an emphasis on managing emissions through the project planning lifecycle. Also, sustainability analysts are assigned to projects, leading workshops, setting goals, and reviewing contracts. Regular brown bag sessions and annual performance reports showcase successful projects and share valuable lessons. This allows project managers and the organization as a whole to balance more traditional financial drivers for projects (scope, schedule, and budget) with climate priorities.

> *"The success of our sustainability efforts is built off a foundation of trained, empowered project managers. DEP's internal project management certification course includes a sustainability module; this in turn is supported by regularly published and updated operating procedures informing contracting, goal setting, and design workshops. Sustainability becomes another lens through which our projects are judged. Meeting scope, schedule, and budget goals are no longer enough for us to consider a project a success; it must also meet its sustainability goals," said Dennis.*

Key Insight: By treating carbon management as an integral component of successful project management, NYC DEP is able to avoid some of the challenges that can make managing carbon more difficult and open the possibility of alternatives to high-carbon assets.

## Keeping Stakeholders Informed

NYC DEP collaborates with consultants by embedding sustainability requirements into standard contracts and developing clear standard operating procedures (SOPs). The cost of implementing sustainability measures typically remains under 1% of the total project cost, proving that sustainability is both achievable and affordable. NYC DEP also includes regular engagement through its internal annual report. Over a decade ago, staff were asked for analyses but were not clear on where the information was going. Now, the report shows how that information is being used.

> *"The data we've collected since implementing sustainability requirements shows that the benefits of considering sustainability far outweighs the costs and enables us to quantify the outcomes of our goals. When calculating the value of protected assets, we see time and again that the costs of resiliency are fractions of what replacement costs would be. We get those justifications that seem obvious in retrospect because we set the goals to ask the questions. The extra effort turns into a winning situation for all of the stakeholders," Ana Barrio, the Deputy Commissioner of the Bureau of Engineering Design and Construction says.*

Key Insight: Not only does NYC DEP use annual checkpoints to check progress toward climate goals, they also use annual reporting to share with staff the progress made and how implementing projects with a climate lens during planning has real, tangible benefits.

# ADDITIONAL RESOURCES AND REFERENCES

1. Investigate NYC DEP's Standard Operating Procedures for project planning, topics including developing a project Sustainability Management Plan, workshop agendas, and energy conservation and GHG reduction plan requirements.
2. Consider sustainability certifications for employees. Madison Metropolitan Sewerage District supports certification of employees in Envision™ to help support sustainability.
3. Review New York City Office of Climate & Environmental Justice's Guide on conducting Whole Process Life Cycle Assessments of projects for embodied carbon reduction in the planning phase.

This paper is part of Net Zero Fundamentals, a collection of action-oriented briefs designed to help water and wastewater utilities cut climate pollution and chart a clear path to net zero. Each brief delivers practical insights, real-world utility examples, and implementation guidance for immediate impact. Access the collection of briefing papers on the US Water Alliance website.

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