Past, Present, and Future Sustainability and Resilience Planning in NYC

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INTRODUCTION

Urban Climate Planning

Sustainability, resilience, equity, and environmental justice are increasingly recognized as core framings in planning to address and mitigate climate change. Indeed, scholarly literature has attended to how cities frame sustainability and resilience and address equity in sustainability planning.[1] However, city sustainability and resilience planning is not static. Less attention has been paid to the question of how these framings have changed in planning over time, particularly in a given place. In the few notable exceptions, scholars contend that understanding the evolution of planning efforts alongside changing historical conditions is important to informing future climate policymaking and identifying strengths, gaps, and inconsistencies as plans evolve.[2] Responding to this assertion, this chapter traces the evolution of climate planning in the context of New York City.

Examining the Evolution of Climate Planning in New York City

New York City has long been considered a leader in urban sustainability planning, serving as an example for other cities and future administrations.[3] This chapter examines nearly 20 years of

[1] Chu, Eric, Asiya Natekal, Gemma Waaland, and Clare EB Cannon. "An Evaluation of US Cities' Efforts to Further Distributive Justice in Climate Adaptation Planning." *npj Urban Sustainability* 5, no. 1 (2025): 41, https://doi.org/10.1038/s42949-025-00237-5; Meerow, Sara, Pani Pajouhesh, and Thaddeus R. Miller. "Social Equity in Urban Resilience Planning." *Local Environment* 24, no. 9 (2019): 793-808, https://doi.org/10.1080/13549839.2019.1645103; Strange, Kaitlin F., Hug March, and Mar Satorras. "Incorporating Climate Justice into Adaptation Planning: The Case of San Francisco." *Cities* 144 (2024): 104627, https://doi.org/10.1016/j.cities.2023.104627;

[2] Vangelis Pitidis and Jon Coaffee, "Catalysing Governance Transformations through Urban Resilience Implementation: The Case of Thessaloniki, Greece," *Cities* 107 (December 2020): 102934, https://doi.org/10.1016/j.cities.2020.102934; Samuel D. Brody, "Are We Learning to Make Better Plans?: A Longitudinal Analysis of Plan Quality Associated with Natural Hazards," *Journal of Planning Education and Research* 23, no. 2 (2003): 191–201, https://doi.org/10.1177/0739456X03258635; Sierra Woodruff et al., "Is Flood Resilience Planning Improving? A Longitudinal Analysis of Networks of Plans in Boston and Fort Lauderdale," *Climate Risk Management* 34 (January 2021): 100354, https://doi.org/10.1016/j.crm.2021.100354; Diana Reckien et al., "Quality of Urban Climate Adaptation Plans over Time," *Npj Urban Sustainability* 3, no. 1 (2023): 13, https://doi.org/10.1038/s42949-023-00085-1.

[3] Christina D. Rosan, "Can PlaNYC Make New York City 'Greener and Greater' for Everyone?: Sustainability Planning and the Promise of Environmental Justice," *Local Environment* 17, no. 9 (2012): 959–76, https://doi.org/10.1080/13549839.2011.627322; William Solecki et al., "Extreme Events and Climate Adaptation-Mitigation Linkages: Understanding Low-Carbon Transitions in the Era of Global Urbanization," *WIREs Climate*

that leadership through NYC's five mandated sustainability plans—PlaNYC (2007, 2011), OneNYC (2015, 2019), and PlaNYC (2023)—spanning three mayoral administrations.[4] In this chapter, we first situate the plans in the context of shifting political priorities and the role of local advocacy, national policy, private transnational efforts, economic conditions, extreme events and climate change. Then, through a qualitative thematic analysis and our own experience working with the Mayor's Office of Climate and Environmental Justice and the New York City Panel on Climate Change, we examine how the City's sustainability planning evolved over time.[5] Specifically, we trace changes in the City's 1) overall framings of sustainability and resilience, 2) framings related to infrastructural, social, and environmental perspectives, 3) focus on climate hazard types, and 4) framings of equity.[6] These dimensions map onto guiding questions of *sustainability and resilience to what, of what,* and *for whom?* (adapted from Meerow and Newell 2019).[7] We conclude with insights for future sustainability planning.

In this chapter, we show that the City's framings of sustainability and resilience evolved through a series of uneven, context-driven shifts, rather than a linear trajectory towards more transformative framings of resilience and equity. We find that plans tend to frame resilience in terms of enduring or withstanding shocks, with limited attention to transformation. Yet, ample opportunity exists for that paradigm to change, particularly given the City's evolving approach in which it incorporated more social dimensions of resilience, institutionalized environmental justice in its sustainability planning, and considered an increasingly nuanced and comprehensive set of climate hazards. We thus highlight areas of potential that draw from and build on the City's existing efforts to advance more transformative resilience and sustainability planning.

PLANYC AND ONENYC (2007 - 2023)

Overview and Timeline of Sustainability Planning in NYC

Starting with the Bloomberg Administration's release of PlaNYC in 2007, the City has published a sustainability plan every four years by mandate of Local Law 17 of 2008. Each plan establishes a set of goals, strategies, and targets for the city to reduce greenhouse gas emissions and adapt to climate change (Table 1). In this section, we situate the shifts in plans within the economic, political, and climate conditions present during each mayoral administration: Bloomberg (2002 - 2013), de Blasio (2014 - 2021), Adams (2022 - 2025) (Figure 1).

Change 10, no. 6 (2019): e616, https://doi.org/10.1002/wcc.616; Nilda Mesa, "Cities and Climate Resilience (NYC Office of Sustainability)," in *Collaborating for Climate Resilience* (Routledge, 2021).

[4] We refer to the PlaNYC and OneNYC documents as "sustainability plans" although resilience was added in 2013 as part of the consideration within the sustainability plans.

[5] Plans analyzed include PlaNYC 2007, 2011, OneNYC 2015, 2019, PlaNYC 2023

[6] The use of "City" as opposed to "city" denotes actions taken by the official city government of NYC.

[7] Sara Meerow and Joshua P. Newell, "Urban Resilience for Whom, What, When, Where, and Why?," *Urban Geography* 40, no. 3 (2019): 309–29, https://doi.org/10.1080/02723638.2016.1206395.

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Table 1: Overview of PlaNYC and OneNYC plans from 2007-2023

Year	Plan Title	Mayor	Key points of focus in each plan
2007	PlaNYC: A Greener, Greater New York	Bloomberg	● Sections on land, water, transportation, energy, air, and climate change ● Addressed challenges of projected population growth, aging and undermaintained infrastructure, and greenhouse gas emissions (GHGs) ● Primarily focused on sustainability of physical infrastructure. Framed economic development as a climate strategy that enables greater density and discourages urban sprawl. ● Climate strategies established planning mechanisms for climate adaptation, updating federal floodplain maps, and amending the building codes for a variety of climate hazards ● Other notable strategies included increasing the city's housing supply, improving accessibility and quality of open space, including brownfield cleanup in environmental justice communities, and upgrade and maintain critical infrastructure
2011	PlaNYC: A Greener, Greater New York (Plan Update)	Bloomberg	● Similar sections in 2007 plan with a new solid waste section ● Similar challenge framing to 2007 plan ● Organized around physical infrastructure, also drew connections to social outcomes like housing affordability ● Introduced the concept of climate resilience ● Added climate strategies for mitigating the urban heat island effect through green infrastructure, tree planting, and cool roofs and a new focus on emergency preparedness and response plans informed by climate projections from the New York City Panel on Climate Change (NPCC)
2015	One New York: The Plan for a Strong and Just City	de Blasio	● Added new sections on governance challenges like criminal justice reform, healthcare access, and workforce development ● Addressed challenges of population growth, aging infrastructure, housing and living costs, and income inequality ● Promoted principles of equity, sustainability and resilience, including a broader definition of resilience related to climate, environmental, and health hazards ● Many climate strategies addressed flooding, with attention to neighborhood- and building-level strategies and larger coastal protection infrastructure projects. Other strategies aimed to mitigate heat at the household level and understand the uneven spatial distribution of heat across the city.
2019	OneNYC: Building a Strong and Fair City	de Blasio	● Added new goals related to democracy, education, and mobility ● Sought to address similar challenges to 2015 ● Promoted principles of equity, just transition, and inequality, particularly in context of concerns about federal administration ● New climate strategies updated management structures for waterfront infrastructure and addressed multi-hazard resilience.

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			● Notably, strategies across all sectors extended out to 2050, providing the longest time frame of any plan.
2023	PlaNYC: Getting Sustainability Done	Adams	● Constricted focus from de Blasio plans, no longer considered broader goals of democracy, education, etc. ● Prioritized strategy implementation and action with the stated goal of "getting sustainability done" and delivering near-term benefits ● Aimed to improve quality of life via focus on green space, waterways, transportation, food, and green economy ● Promoted principles of environmental justice ● Climate strategies expanded to include extreme heat, distinguish flooding types (coastal storm surge, chronic tidal flooding, and extreme rainfall), as well as proposed new coastal flooding strategies like a housing mobility program for voluntary buyouts in last resort cases

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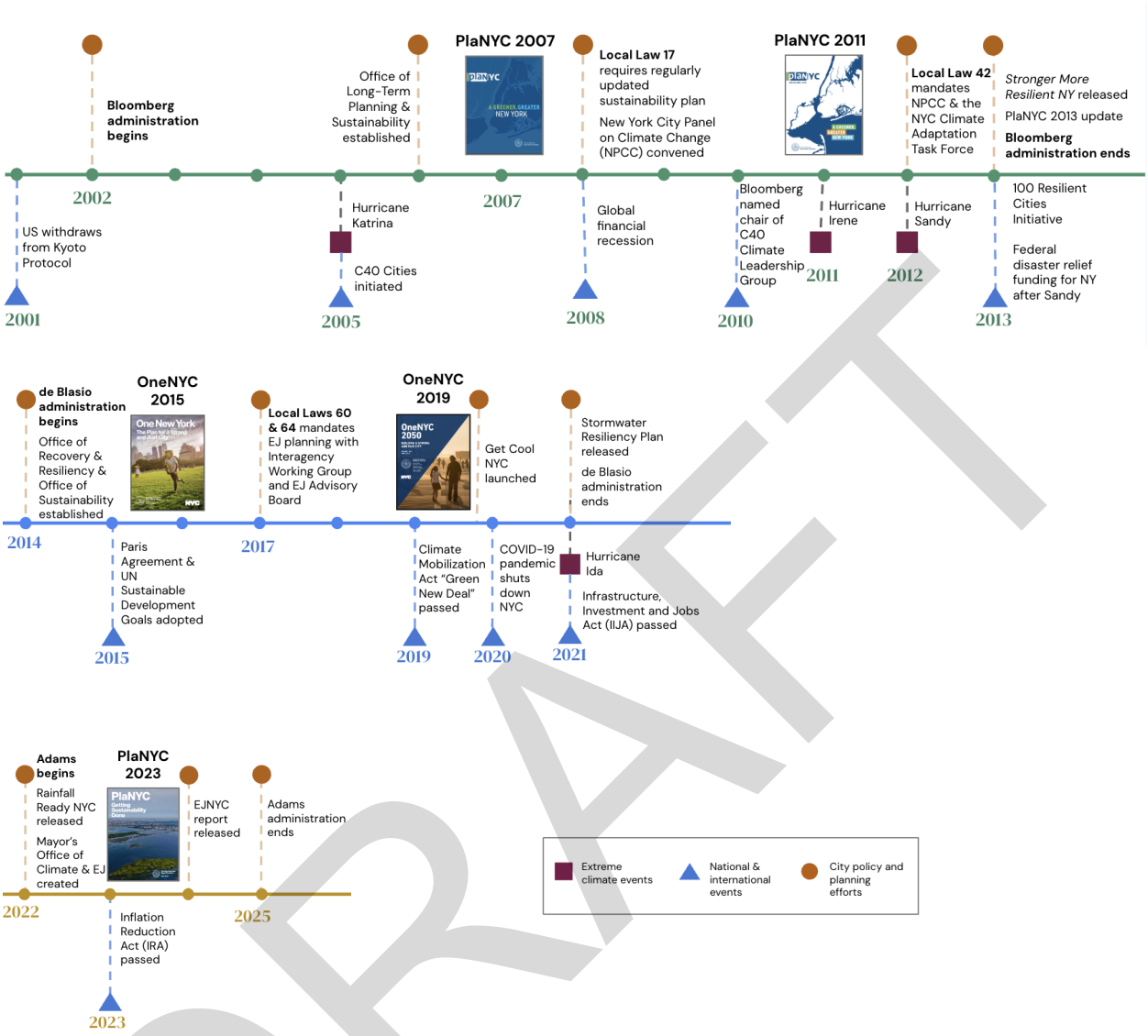


Figure 1. Timeline of historic and sustainability and resiliency events in NYC and nationally (2002 - 2027).

Bloomberg Administration (2002 - 2013): The emergence of institutionalized sustainability planning

Political platform and local context

Mayor Michael Bloomberg took office in 2002 amid a city rebuilding from decades of disinvestment and the recent trauma of September 11, 2001. His early agenda centered on attracting business and development, creating a sense of economic stability, and firmly establishing the city as the epicenter of finance. Along with projected population growth to nine million people by 2030, the 2012 Olympic bid prompted a comprehensive land use and physical infrastructure review that surfaced operational efficiency challenges in transportation, energy,

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water supply, and a lack of open space or land for housing.[8] What began as a strategic land-use plan evolved into a sustainability plan that tied together the city's infrastructure sectors[9] and complemented earlier sustainability efforts, like its 2004 Energy Policy Task Force. Thus, New York City's first sustainability plan, PlaNYC 2007, positioned sustainability planning as part of the city's broader rebuilding and stability narrative.[10]

Bloomberg went on to institutionalize sustainability planning through legal and bureaucratic scaffolding (Figure 1a). In 2006, Bloomberg created the Office of Long-Term Planning and Sustainability and the Mayor's Office of Operations and a Sustainability Advisory Board composed of business leaders, experts, and community activists. In 2008, he secured a legal mandate (Local Law 17) for recurring sustainability plans every four years. In 2012, he institutionalized (Local Law 42) the New York City Panel on Climate Change (NPCC) to synthesize the current state of climate science to inform city policymaking, as well as the Climate Change Adaptation Task Force to recommend climate adaptations for the city's physical infrastructure (see Rosenzweig et al. for more detail).

National and global discourse

At the time, international and national discourse and policymaking on sustainability largely focused on reducing greenhouse gas emissions. In January 2001, the Intergovernmental Panel on Climate Change released its Third Assessment, which included robust evidence for human-caused climate change from greenhouse gases.[11] That same year, President Bush withdrew from the international Kyoto Protocol to reduce greenhouse gas emissions and mitigate climate change. Notably, the framing of the Bush Administration's "Clear Skies" alternative to Kyoto as a "growth-oriented approach to climate change" is echoed in NYC's first sustainability plan. It reflected the broader national tendency to fold climate action into an economic-growth narrative, rather than treat the two as being in tension.[12] Cities began organizing independently of the climate and sustainability policy gridlock and in October 2005, the international C40 Cities was founded as a global network to position cities as leaders of climate action.

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[8] ICLEI and NYC Office of Long-Term Planning and Sustainability, *The Process Behind PlaNYC: How the City of New York Developed Its Comprehensive Long-Term Sustainability Plan* (2010), https://s-media.nyc.gov/agencies/planyc2030/pdf/iclei_planyc_case_study_201004.pdf.

[9] ICLEI and OLTPS, *The Process Behind PlaNYC: How the City of New York Developed Its Comprehensive Long-Term Sustainability Plan*, 13.

[10] Steven Cohen, "From PlaNYC to OneNYC: New York's Evolving Sustainability Policy," *State of the Planet*, April 27, 2015, https://news.climate.columbia.edu/2015/04/27/from-planyc-to-onenyc-new-yorks-evolving-sustainability-policy/.

[11] Daniel L. Albritton et al., Summary for Policymakers: A Report of Working Group I of the Intergovernmental Panel on Climate Change (Intergovernmental Panel on Climate Change, 2001), https://www.ipcc.ch/site/assets/uploads/2018/07/WG1_TAR_SPM.pdf.

[12] Bill Dawson, "The Politics of Energy: Coal and Bush's Greenhouse-Gas Policy," Center for Public Integrity, December 4, 2003, https://publicintegrity.org/environment/the-politics-of-energy-coal-and-bushs-greenhouse-gas-policy/.

Climate-related events

Climate resilience, by contrast, entered the City's agenda more reactively and was not part of the PlaNYC founding framing. Hurricane Katrina (2005) in the Gulf Coast drew national attention to infrastructure vulnerability and disaster preparedness, though scholars have questioned how fully NYC absorbed its lessons.[13] The unprecedented Hurricane Sandy (2012) in New York City exposed its lack of adequate preparedness. The estimated $19 billion in flood and wind damage prompted neighborhood level coastal protection efforts and the City's first dedicated climate resilience plan, "A Stronger, More Resilient New York" (2013).[14] That same year, the Rockefeller Foundation's 100 Resilient Cities initiative began establishing Chief Resilience Officers in participating cities, helping to shape and solidify climate resilience in urban planning globally.[15] A parallel influx of federal disaster relief funding following Hurricane Sandy further served to embed climate resilience into the City's long-term planning.

de Blasio Administration (2014 - 2021): Foregrounding Inequality

Political platform and local context

Mayor Bill de Blasio took office on January 1, 2014 as the first Democrat to serve as mayor since 1989. Where the Bloomberg administration institutionalized sustainability planning and centered it around economic growth, de Blasio's administration reoriented it around equity. His socially progressive stance addressing housing, education, and inequality reshaped the City's approach to climate planning. Within his first year, he restructured city government to reflect this shift. He created the Office of Sustainability (merging the Office of Long-Term Planning and Sustainability with the Office of Environmental Coordination) and a new Office of Recovery and Resiliency, formalizing resilience as a distinct function in the wake of Hurricane Sandy (Figure 1b). Equity became more deeply embedded in the years that followed: in 2017, Local Laws 60 and 64 required the City to convene an Interagency Working Group and Environmental Justice Advisory Board, study environmental justice areas citywide, and develop a plan to address the injustices identified. This work built on decades of advocacy by the city's environmental justice community (Figure 1b).

[13] Douglas Hill, "The Lessons of Katrina, Learned and Unlearned," *Journal of Coastal Research* 28, no. 2 (2012): 324–31, https://doi.org/10.2112/11A-00026.1.

[14] NYC Community Development Block Grant Disaster Recovery, "Impact of Hurricane Sandy," NYC Community Development Block Grant Disaster Recovery, https://www.nyc.gov/site/cdbgdr/hurricane-sandy/hurricane-sandy.page.

[15] Martín, Carlos, and Sara McTarnaghan, *Institutionalizing Urban Resilience: A Midterm Monitoring and Evaluation Report of 100 Resilient Cities*, *Urban Institute* (2018), https://www.urban.org/research/publication/institutionalizing-urban-resilience; Meerow, Sara, and Sierra C. Woodruff. "Seven principles of strong climate change planning." *Journal of the American Planning Association* 86, no. 1 (2020): 39-46, https://doi.org/10.1080/01944363.2019.1652108; Wang, Di et al. "The Impact of the Global 100 Resilient Cities Strategy on Urban Resilience under Climate Change." Cities 167 (2025): 106370, https://doi.org/10.1016/j.cities.2025.106370.

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Global policy

The local shift paralleled international developments. The UN's Sustainable Development Goals, unlike its successor the Millennium Development Goals, placed explicit emphasis on inequality and resilience, directly informing OneNYC's framing and inspiring similar efforts in other cities.[16] The Paris Agreement's (2015) legally binding commitments to reduce greenhouse gas emissions further cemented global attention to climate mitigation.

Climate-related events

During de Blasio's tenure as mayor, climate risk became harder to treat as an abstract or future concern. The city faced increasingly severe and frequent heat waves, a trend projected to worsen.[17] A 2015 study of New York City's heat vulnerability index (HVI) documented stark disparities in vulnerability to heat across lower-income communities, communities of color, and the elderly.[18] This heightened focus on disparities in climate resilience shaped the OneNYC plans and the City's complementary Cool Neighborhoods NYC program (see Schlichting and Kuighadush for more detail).

In May 2021, the *Stormwater Resiliency Plan* was released examining the potential impact of future extreme rain events. On September 1, 2021, Hurricane Ida overwhelmed the city and killed 14 New Yorkers, set a record for single-hour rainfall, overwhelmed the sewer system, and caused inland flooding outside the 100-year floodplain across Queens, Brooklyn, the Bronx, and Staten Island. The impacts exposed the intersection between climate change, housing availability and affordability, and environmental justice, as the majority of victims were people of color who lived in unregulated basement apartments.[19] The storm's impacts would go on to influence the Adams administration's 2023 PlaNYC, sharpening its focus on strategies to address extreme precipitation events.

COVID-19

The pandemic, which shut down the city on March 20, 2020, further exposed the disproportionate impacts of climate, environmental, and health disasters on environmental justice

[16] Jessica Espey et al., "OneNYC and the SDGs: A City Strategy with Global Relevance," in *Smarter New York City* (Columbia University Press, 2018), 19, https://www.degruyterbrill.com/document/doi/10.7312/dalm18374-005/html?srsltid=AfmBOop_mpLSjE2kJZ6wQSQLsMRymKN-w119Se4lRs4S_uL7gUsWfmUe.

[17] NYC Environment and Health Data Portal, *2025 Heat Mortality Report* (2025), https://a816-dohbesp.nyc.gov/IndicatorPublic/data-features/heat-report/; Luis Ortiz et al., "NPCC4: Tail Risk, Climate Drivers of Extreme Heat, and New Methods for Extreme Event Projections," *Annals of the New York Academy of Sciences* 1539, no. 1 (2024): 49–76, https://doi.org/10.1111/nyas.15180.

[18] Jaime Madrigano et al., "A Case-Only Study of Vulnerability to Heat Wave-Related Mortality in New York City (2000-2011)," *Environmental Health Perspectives* 123, no. 7 (2015): 672–78, https://doi.org/10.1289/ehp.1408178.

[19] Ariel Yuan et al., "Immediate Injury Deaths Related to the Remnants From Hurricane Ida in New York City, September 1-2, 2021," *Disaster Medicine and Public Health Preparedness* 18 (April 2024): e55, https://doi.org/10.1017/dmp.2024.49.

communities.[20] COVID catalyzed the introduction of new programs that advocates had long called for, like Get Cool NYC, which distributed 73,000 free home air conditioners during the pandemic.[21] Collectively, these efforts served to coalesce support for institutionalizing equity and environmental justice in sustainability and resilience planning.

Adams Administration (2022 - 2025): "Getting Sustainability Done"

Political platform and local context

Mayor Eric Adams took office on January 1, 2022, campaigning for more efficient government, public safety, and improving conditions for low-income households. These priorities carried into the administration's 2023 sustainability planning, framed around "getting sustainability done," streamlining, and implementation efficiency, rather than new goal setting.

To operationalize this aim for efficiency, the administration re-consolidated the City's climate offices—the Office of Sustainability, the Office of Climate Resiliency (formerly Recovery and Resiliency), the Office of Environmental Coordination, and the Office of Environmental Remediation—into a single Mayor's Office of Climate and Environmental Justice with an explicit equity mandate (Figure 1c). Building on de Blasio's 2021 Stormwater Resiliency Plan and lessons from Hurricane Ida, in 2022 the Adams administration released *Rainfall Ready NYC*, outlining the City's strategy for future storm events. As required by Local Laws 60 and 64, the Environmental Justice NYC (EJNYC) report was released in 2024, laying groundwork for a future EJNYC plan addressing the disparities it documents.

Economic conditions

Newly favorable federal conditions opened new funding streams for city climate policy. President Biden's Inflation Reduction Act (IRA, 2022) directed significant clean-energy and climate funding to New York City, including support for a new NYC Federal Infrastructure Funding Task Force charged with selecting "shovel ready, shovel worthy" projects (PlaNYC 2023, p. 8). At the city level, however, the understated budget shortfall[22] revealed the potential limits of "getting it done" within a constrained fiscal environment.

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[20] Gaige Hunter Kerr et al., "COVID-19 Pandemic Reveals Persistent Disparities in Nitrogen Dioxide Pollution," *Proceedings of the National Academy of Sciences* 118, no. 30 (2021): e2022409118, https://doi.org/10.1073/pnas.2022409118; Eric B. Brandt et al., "Air Pollution, Racial Disparities, and COVID-19 Mortality," *Journal of Allergy and Clinical Immunology* 146, no. 1 (2020): 61–63, https://doi.org/10.1016/j.jaci.2020.04.035; L. Ortiz et al., "Overlapping Heat and COVID-19 Risk in New York City," *Urban Climate* 41 (January 2022): 101081, https://doi.org/10.1016/j.uclim.2021.101081; Janelle Knox-Hayes et al., "The Compound Risk of Heat and COVID-19 in New York City: Riskscapes, Physical and Social Factors, and Interventions," *Local Environment* 28, no. 6 (2023): 699–727, https://doi.org/10.1080/13549839.2023.2187362.

[21] Jenny Bock and Sonal Jessel, "8 Ways NYC Can Help Vulnerable Communities Survive Summer Heat," *State of the Planet*, September 27, 2021, https://news.climate.columbia.edu/2021/09/27/nyc-vulnerable-communities-summer-extreme-heat/.

[22] Office of the NYC Comptroller, "NYC Comptroller Lander Releases Annual Report, Warning of Fiscal Challenges Amid Federal Cuts and Adams Administration's Shortsighted Planning," *Office of the New York City Comptroller Mark Levine*, December 16, 2025, https://comptroller.nyc.gov/newsroom/nyc-comptroller-lander-

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EVOLVING SUSTAINABILITY & RESILIENCE FRAMINGS

Reflecting on the possible name change of de Blasio's 2015 plan, a former Bloomberg advisor and NYU professor commented, "PlaNYC was a very catchy non-jargon term. The holy trinity of the environmental movement is based on jargon: resiliency, sustainability, and transparency. They are the only proven and widely accepted cure for insomnia."[23] This assertion invites a related question: What do we gain or lose by not clearly defining what type of plans these are, and what do these terms mean in practice?

Here, we trace the evolving framings of sustainability and resilience planning, seeking to articulate what these concepts mean to the City and to answer the questions of *resilience and sustainability of what, to what, and for whom*?

Sustainability or Resilience Plans?

Although academic scholarship tries to separate or distinguish between sustainability, resilience, and climate action planning initiatives and terms, in practice, the line is blurrier. Meerow and Woodruff (2019) differentiate between climate action, adaptation, and resilience plans, suggesting, "Whereas climate action plans focus on mitigating GHGs and adaptation plans on preparing for the impacts of climate change, resilience plans seek to enhance communities' abilities to cope with a variety of shocks and stresses, from earthquakes to extreme weather to racial inequity."[24] Sustainability definitions in planning and academic literature also overlap with a focus on greenhouse gas mitigation and growth while maintaining the environment, economy, social responsibility, and equity for future generations.[25]

In practice, however, the framing and use of sustainability and resilience shifts, and thus it is difficult to accurately or consistently characterize the plans (Figure 2). The Bloomberg administration's 2007 plan predominantly focused on sustainability in relation to topics like housing, a healthy environment, energy, and land use. Although it discussed adaptation to climate change, it did not use the term 'resilience'. The 2011 plan maintained a strong focus on sustainability, but defined the term climate resilience and interwove perspectives on sustainability and resilience. For example, the plan described co-benefits of strategies, such as building public green infrastructure projects that improve stormwater drainage and water quality.

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releases-annual-report-warning-of-fiscal-challenges-amid-federal-cuts-and-adams-administrations-shortsighted-planning/; NYC Office of the Mayor, "Mayor Mamdani Details 'Adams Budget Crisis,'" *NYC Office of the Mayor*, January 28, 2026, https://www.nyc.gov/mayors-office/news/2026/01/mayor-mamdani-details--adams-budget-crisis-.

[23] Mitchell Moss as quoted in David Giambusso, "Name Change Considered for PlaNYC," *Politico*, April 20, 2015, https://www.politico.com/states/new-york/city-hall/story/2015/04/name-change-considered-for-planyc-021403.

[24] Sara Meerow and Sierra C. Woodruff, "Seven Principles of Strong Climate Change Planning," *Journal of the American Planning Association* 86, no. 1 (2020): 39–46, https://doi.org/10.1080/01944363.2019.1652108.

[25] Sara Meerow and Joshua P. Newell, "Urban Resilience for Whom?"; Thomas Elmqvist et al., "Sustainability and Resilience for Transformation in the Urban Century," *Nature Sustainability* 2, no. 4 (2019): 267-273, https://doi.org/10.1038/s41893-019-0250-1.

Building on past experiences with extreme weather events, over time, the City increasingly integrated both sustainability and resilience, recognizing the trade-offs and co-benefits across these domains. In the wake of Hurricane Sandy, the 2013 update to the City's sustainability plan mandate (Local Law 17 of 2008) adds an explicit consideration of resilience. Accordingly, the de Blasio administration's 2015 and 2019 plans included both framings of sustainability and resilience—highlighting energy and other sustainability strategies as contributions to climate resilience. By 2023, resilience was starting to perhaps even eclipse sustainability as a focus. The Adams administration refers to its PlaNYC 2023 as a "climate action plan" and outlines sustainability-related GHG mitigation strategies and climate resilience strategies. The fluidity of the concepts of sustainability and resilience means they are interpreted and applied differently over time, reflecting differing political, economic, and climate conditions and variably shaping outcomes. Therefore, terminology that accounts for these ranging terms may more accurately reflect the dynamic realities of urban climate planning.

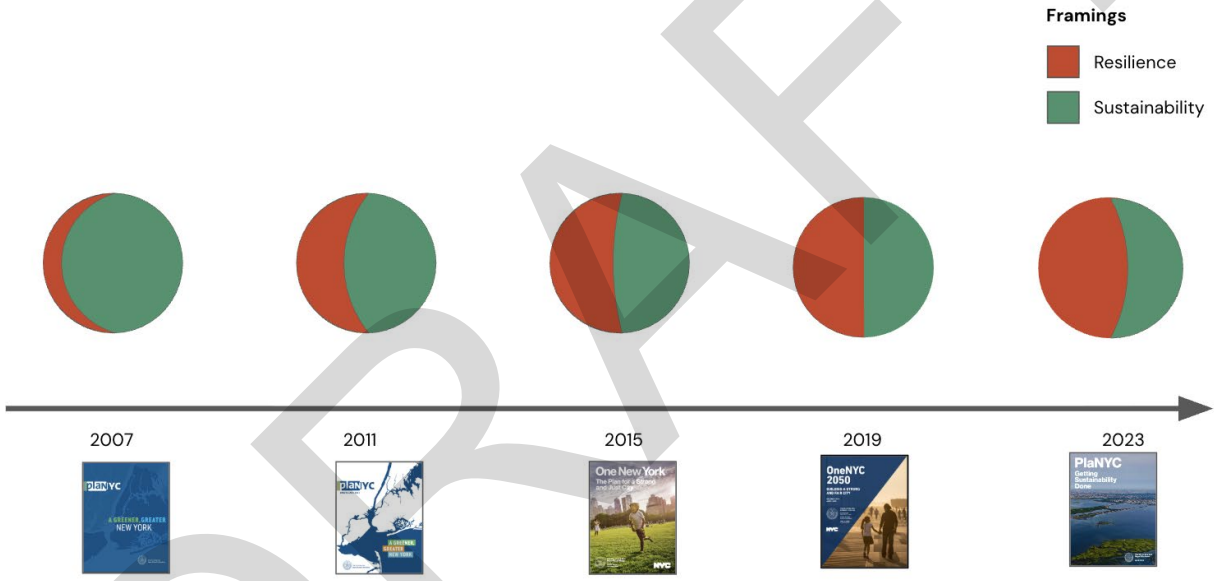


Figure 2. Changes in focus on sustainability and resilience over time

Shifting framings of "sustainability" in NYC planning

Drawing from common sustainability definitions derived from government planning and academic literature, we examine how the City frames sustainability. Over time, alongside a lessened focus on sustainability, the plans' concept of sustainability evolved from a central focus on growth toward a more nuanced, socially explicit framing. In a reinforcement of his pro-business, development-oriented leadership style, Bloomberg's plans consistently framed sustainability in the context of supporting economic growth and the capacity of physical infrastructure to sustain a growing population and economy. Bloomberg's PlaNYC plans emphasized how NYC's population density and public transit system reduce inefficient, greenhouse gas emissions-inducing sprawl and made it one of the "the most sustainable places

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on earth."[26] Yet, the plan also recognized that New York's greenhouse gas emissions were increasing, attributed to higher energy consumption and new construction.[27]

Despite the sustainability framing, the development-oriented growth created tension. Perhaps in response to NPCC reports and Bloomberg's role in the C40 Climate Leadership group, PlaNYC 2011 adopted a more critical perspective, acknowledging the downsides to unplanned growth and acknowledged the potential exposure to climate hazards.[28] Some scholars outright rejected the idea that sustainability and growth are compatible.[29] For example, development of the High Line and other mega projects like Atlantic Yards, Hudson Yards, and waterfront development in Brooklyn and Queens ushered in during the Bloomberg era were part of what Fainstein (2018) termed "the growth machine" and created tradeoffs for nearby communities.[30]

In response to Bloomberg's approach, de Blasio's administration shifted the framing of sustainability from primarily economic growth to more explicitly addressing equity and the social pillar of sustainability. de Blasio sought to un-couple luxury real estate from the city's overall economic growth, arguing that while the city does need economic growth, it must be done inclusively in a way that does not widen growing economic inequality. Over time, while the City maintained a focus on economic growth and development, the plans increasingly addressed economic inequality and reflected the 2015 Sustainable Development Goals framing of sustainability. Mesa (2021) describes the 2015 OneNYC plan as the first time a major US city connected environmental initiatives, economic development, equity, and resilience.[31] Part of this distinction was inspired by the plan's unprecedented adoption of the UN's definition of

[26] City of New York, *PlaNYC: A Greener, Greater New York*, PlaNYC (City of New York, 2007), 136, https://climate.cityofnewyork.us/wp-content/uploads/2022/10/PlaNYC-full_report_2007.pdf.
[27] City of New York, *PlaNYC: A Greener, Greater New York*, 146.
[28] City of New York, *PlaNYC Update 2011: A Greener, Greater New York* (New York, NY, 2011), 7, 158, https://www.nyc.gov/assets/climate/downloads/pdfs/planyc_2011_planyc_full_report.pdf.
[29] Donovan Finn and Lynn McCormick, "Urban Climate Change Plans: How Holistic?," *Local Environment* 16, no. 4 (2011): 397–416, https://doi.org/10.1080/13549839.2011.579091; Michael Gunder, "Sustainability: Planning's Saving Grace or Road to Perdition?," *Journal of Planning Education and Research* 26, no. 2 (2006); Diana Maccallum and Diane Hopkins, "The Changing Discourse of City Plans: Rationalities of Planning in Perth, 1955–2010," *Planning Theory & Practice* 12, no. 4 (2011): 485–510; Scott Campbell, "Green Cities, Growing Cities, Just Cities?: Urban Planning and the Contradictions of Sustainable Development," *Journal of the American Planning Association* 62, no. 3 (1996): 296–312, https://doi.org/10.1080/01944369608975696.
[30] Nate Millington, "From Urban Scar to 'Park in the Sky': Terrain Vague, Urban Design, and the Remaking of New York City's High Line Park," *Environment and Planning A: Economy and Space* 47, no. 11 (2015): 2324–38, https://doi.org/10.1177/0308518X15599294; Julie Sze, "Sports and Environmental Justice: 'Games' of Race, Place, Nostalgia, and Power in Neoliberal New York City," *Journal of Sport and Social Issues* 33, no. 2 (2009): 111–29, https://doi.org/10.1177/0193723509332581; Bruce Schaller, "New York City's Congestion Pricing Experience and Implications for Road Pricing Acceptance in the United States," *Transport Policy* 17, no. 4 (2010): 266–73, https://doi.org/10.1016/j.tranpol.2010.01.013; Pablo Herreros-Cantis et al., "Shifting Landscapes of Coastal Flood Risk: Environmental (in)Justice of Urban Change, Sea Level Rise, and Differential Vulnerability in New York City," *Urban Transformations* 2, no. 1 (2020): 9, https://doi.org/10.1186/s42854-020-00014-w; Susan S. Fainstein, "Resilience and Justice: Planning for New York City," in *The Resilience Machine* (Routledge, 2018).
[31] Mesa, "Cities and Climate Resilience (NYC Office of Sustainability)."

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sustainability, which recognized the interdependencies of social, economic, and environmental factors. While the plan was still grounded in physical infrastructure, it also emphasized equitable, neighborhood-level investments and a strong priority of addressing economic inequality and ensuring inclusive economic growth.[32]

Resilience framings

Building on a deep tradition of urban sustainability planning, cities have increasingly integrated climate resilience into their planning. This emergence reflects a growing global consensus about mitigating greenhouse gas emissions while planning for climate hazards in response to their increasing frequency and severity. Urban planning serves as a critical process for cities to explicitly consider the long-term impacts of climate change—from flooding, to heat waves, to cold snaps—and how it will respond to them.

In seeking to build resilience, a concept that city practitioners and scholars have interpreted and operationalized in widely varying ways, one foundational element is the capacity for responding to shocks and stresses.[33] From there, definitions diverge by disciplinary origin (engineering, ecology, and the social sciences) and perceptions of the outcomes of resilience—is the goal of resilience to "bounce back" to a previous state, to resist or withstand shocks and stresses outright, or to view disruptions as an opportunity for "bouncing forward" or transformation? Applying the lens of transformation in academic analysis highlights ways that cities can think about positive alternatives to business-as-usual practices that seek to address underlying inequitable social and economic structures. These variations are reflected in the differing ways that cities have incorporated resilience into their planning.[34] Even within the same city, we find "resilience" as a planning concept evolves over time as the science on future climate impacts and corresponding solutions advances and cities learn from their early efforts. Drawing from definitions in the academic literature (Table 2), we examine how the City frames the goals of its resilience efforts.

Table 2. Definitions of resilience framings

[32] Espey et al., "1. OneNYC and the SDGs."

[33] Sara Meerow et al., "Social Equity in Urban Resilience Planning," *Local Environment* 24, no. 9 (2019): 793–808, https://doi.org/10.1080/13549839.2019.1645103; Tischa A. Muñoz-Erickson et al., "Beyond Bouncing Back? Comparing and Contesting Urban Resilience Frames in US and Latin American Contexts," *Landscape and Urban Planning* 214 (October 2021): 104173, https://doi.org/10.1016/j.landurbplan.2021.104173; Christophe Béné et al., "Resilience as a Policy Narrative: Potentials and Limits in the Context of Urban Planning," *Climate and Development* 10, no. 2 (2018): 116–33, https://doi.org/10.1080/17565529.2017.1301868.

[34] Jon Coaffee et al., "Urban Resilience Implementation: A Policy Challenge and Research Agenda for the 21st Century," *Journal of Contingencies and Crisis Management* 26, no. 3 (2018): 403–10, https://doi.org/10.1111/1468-5973.12233.

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Resilience Framings	Definition	References[35]
Transformation	The radical departure of structure and function to a fundamentally different system state, indicating new assumptions, rules, and practices, not just altered function.	Muñoz-Erickson et al. 2021, Amegavi et al. 2024, Chelleri & Baravikova 2021; Amirzadeh et al. 2022
Bounce forward	Resilience is described as the capacity for improving as a result of a disruption rather than returning to the status quo.	Meerow & Stults 2016; Olsson et al. 2015; Muñoz-Erickson et al. 2021, Amegavi et al. 2024, Chelleri & Baravikova 2021; Amirzadeh et al. 2022
Bounce back/Rebound	Resilience is described as the capacity for returning to a previous or normal (status quo) state following a disturbance, shock, or stress. It focuses on restoring essential basic structures and functions and the ability to persist in an uncertain world.	Meerow & Stults 2016, Olsson et al. 2015; Muñoz-Erickson et al. 2021, Amegavi et al. 2024, Chelleri & Baravikova 2021; Amirzadeh et al. 2022
Withstand shock/Robustness	Described as robust, strengthening, resisting, or avoiding disruptions, change, or disasters. Shocks or stressors do not affect the system.	Walker et al. 2006, Muñoz-Erickson et al. 2021, Amegavi et al. 2024, Chelleri & Baravikova 2021; Amirzadeh et al. 2022
Weathering/Coping	Some impact is felt, but we muddle through it, survive, and deal with it. Change is accepted, weathering the storm.	Muñoz-Erickson et al. 2021, Amegavi et al. 2024, Chelleri & Baravikova 2021; Amirzadeh et al. 2022

From weathering to robustness

Over time, the concepts of climate resilience evolved reflecting their historical contexts. However, all five plans (2007-2023) maintained a strong emphasis on withstanding shock (Figure 3). Without using the term 'resilience' or 'withstand', PlaNYC 2007 addressed resilience to climate hazards primarily from the perspectives of 'weathering and coping' and 'withstanding shock and robustness,' For example, the plan described, "Protecting our infrastructure is crucial, but we also need to prepare our city to deal with the consequences of climate change, especially in flood-prone areas. There are obvious impacts to people's property and livelihoods from windstorms, flooding, heat waves, and other direct effects of climate change. Shifting climate

[35] Muñoz-Erickson et al., "Beyond Bouncing Back?"; George Babington Amegavi et al., "Exploring the Realities of Urban Resilience: Practitioners' Perspectives," *International Journal of Disaster Risk Reduction* 103 (March 2024): 104313, https://doi.org/10.1016/j.ijdrr.2024.104313; Lorenzo Chelleri et al., "Resilience Trade-Offs: Addressing Multiple Scales and Temporal Aspects of Urban Resilience," *Environment and Urbanization* 27, no. 1 (2015): 181–98, https://doi.org/10.1177/0956247814550780; Melika Amirzadeh et al., "Urban Resilience: A Vague or an Evolutionary Concept?," *Sustainable Cities and Society* 81 (June 2022): 103853, https://doi.org/10.1016/j.scs.2022.103853; Sara Meerow and Melissa Stults, "Comparing Conceptualizations of Urban Climate Resilience in Theory and Practice," *Sustainability* 8, no. 7 (2016): 701, https://doi.org/10.3390/su8070701; Lennart Olsson et al., "Why Resilience Is Unappealing to Social Science: Theoretical and Empirical Investigations of the Scientific Use of Resilience," *Science Advances* 1, no. 4 (2015): e1400217, https://doi.org/10.1126/sciadv.1400217.

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patterns can take lives and pose major public health dangers."[36] PlaNYC 2007 also touched on a bouncing forward framing, conveying a sense of optimism about improving conditions. For example, its introduction stated, "The 1970s taught us that investing in our future is not a luxury, but an imperative. With that in mind, this Plan seeks to secure for our children a city that is even greater than the one we love today."[37] It also asserted, "PlaNYC will reduce our city's greenhouse gas emissions by 30% simply by extending and enhancing the inherent strength of New York City itself."[38] The more common framing of weathering and coping in PlaNYC aligns with the early stages of planning rather than implementing substantial, concrete actions to address climate impacts.

Later plans adopted increasingly nuanced definitions of resilience, while maintaining a strong focus on withstanding shock. Bloomberg's PlaNYC 2011 adopted an explicit definition of climate resilience, defining it as "our ability to withstand and recover from extreme events and environmental changes."[39] The OneNYC 2015 further expanded the withstanding shock definition, "The capacity of the city to withstand disruptive events, whether physical, economic, or social", and elaborated with the framing of bouncing forward "the ability of people, the places they live, and our infrastructure systems—such as transportation and energy—to withstand a stress or shock event, to recover, and emerge even stronger."[40] Relative to 2011, the 2015 definition also added specificity to who or what is resilient (i.e. people, neighborhoods, and infrastructure). Drawing from 100 Resilient Cities definition, it considered resilience to threats beyond climate and environmental hazards, such as high unemployment, aging infrastructure, endemic violence, and growing inequality.[41] Throughout OneNYC 2015, the City took a strong 'withstand shock' framing through "maintaining" services and "strengthening" infrastructure. Bouncing back or "building back" in the wake of Hurricane Sandy was also particularly prevalent in the 2015 plan. While maintaining an emphasis on withstanding shock, the 2019 and 2023 plans narrowed their definition of resilience to re-focus on climate hazards.

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[36] City of New York, *PlaNYC: A Greener, Greater New York*, 139.
[37] City of New York, *PlaNYC: A Greener, Greater New York*, 4.
[38] City of New York, *PlaNYC: A Greener, Greater New York*, 136.
[39] City of New York, *PlaNYC Update 2011: A Greener, Greater New York*, 152.
[40] City of New York, *OneNYC: A Plan for a Strong and Just City* (New York, NY, 2015), 16, 219, https://www.nyc.gov/html/onenyc/downloads/pdf/publications/OneNYC.pdf.
[41] City of New York, *OneNYC: A Plan for a Strong and Just City*, 15.

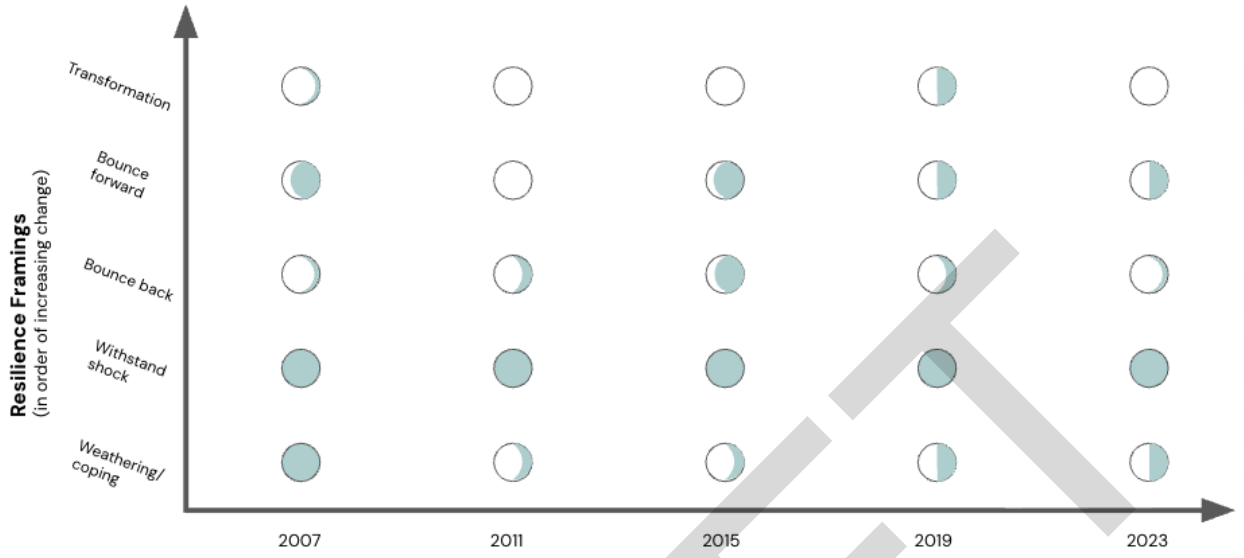


Figure 3. Presence of resilience framings in NYC's sustainability plans over time. Circle fill reflects the relative presence of the resilience framing within each plan.

Limited transformation

Notably, across all plans, the framing of transformation was invoked least often. The strong focus on withstanding shock and robustness may preclude opportunities for transformation, which incorporates principles like flexibility and adaptability. When examining the plans' trajectory towards transformation, we see a push and pull between more pragmatic, implementation-focused and more visionary, futures-oriented approaches. Of the plans, OneNYC 2019 stands out in framing resilience as an opportunity for transformation. For example, the City claimed, "We recognize that we face a true climate emergency, one that requires us to transform how we live."[42] It also discussed the concept of a just transition, which is widely considered a transformative process to a regenerative, non-extractive economy.[43] Building on the 2015 plan's societal goals like social and economic inequality, the 2019 plan set out loftier goals over a longer time frame, presenting a vision for 2050 where "Health care is a right for every New Yorker," "New Yorkers no longer rely on cars," and "New York City's economic strength provides security and opportunity for all."[44] It also reflected an era where cities committed to social justice and addressing climate change to make up for its absence at the federal level. In contrast, the subsequent PlaNYC 2023, developed in the wake of Hurricane Ida and amid city budget constraints, took a more pragmatic tone, focusing on "getting sustainability done" and near-term implementation for its sustainability and resilience initiatives. These ebbs and flows in

[42] City of New York, *OneNYC 2050: Building a Strong and Fair City* (New York, NY, 2019), 12, https://www.nyc.gov/assets/climate/downloads/pdfs/OneNYC_2050_Strategic_Plan.pdf.
[43] Climate Justice Alliance, *Just Transition Principles* (2018), https://ik.imagekit.io/omprakash/blog/b275f54ec35ac280.pdf.
[44] City of New York, *OneNYC 2050: Building a Strong and Fair City*, 6.

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transformative framings reflect responsiveness to the changing economic and political realities of their time.

Sustainability and Resilience *of What*? From Physical Infrastructure to Centering Livelihoods and Well-Being

Next, we examine the focus of the sustainability and resilience efforts. In other words, asking: sustainability of what?, and resilience of what? Cities are complex systems made up of the built environment and physical infrastructure, social systems (e.g., communities, economy, education, etc.), and ecological and environmental dimensions. Scholars contend that attention to all of these domains and how they interface with one another is critical to building urban climate resilience.[45] Over time, the City's framing of sustainability and resilience evolved from a central focus on physical infrastructure to foregrounding people's lived experiences (Figure 4).

Infrastructure

While each plan attends to the social impacts of sustainability, the focus on physical infrastructure and livelihoods becomes more balanced and integrated over time. This shift may be partly attributed to Bloomberg's early emphasis on rebuilding physical infrastructure—from energy to transit to housing—after decades of disrepair.

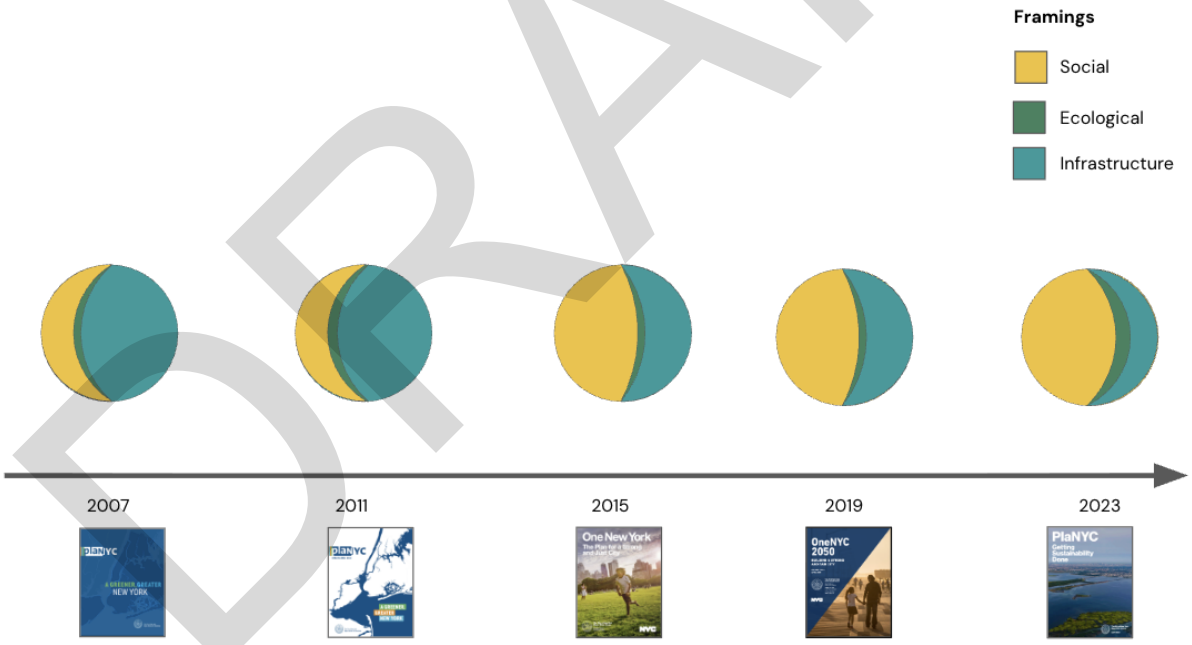


Figure 4. Changes in Social, Ecological, and Infrastructure Framings of Sustainability and Resilience Over Time

[45] Chester et al. "Sensemaking for entangled urban social, ecological, and technological systems in the Anthropocene." *Npj Urban Sustainability* 3, no. 1 (2023): 39, https://doi.org/10.1038/s42949-023-00120-1.

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PlaNYC 2007 and 2011 acknowledged the interconnections between the state of the city's physical infrastructure in the context of growing social pressures and the need to accommodate new population growth. OneNYC 2015 and 2019 connected physical infrastructure more explicitly to social outcomes in the context of climate hazards. For example, in the context of extreme heat, OneNYC 2019 described the need for air conditioners to mitigate health impacts, while also recognizing the increasing demand for electricity and the possibility of blackouts. PlaNYC 2023 further reflected on how social, environmental, and physical infrastructure elements interact to either undermine or support sustainability and resilience outcomes. This recognition of interdependencies is crucial to recognizing co-benefits and mitigating trade-offs of planning decisions.

Social

As the plans evolved, the prominent focus on physical infrastructure shifted to a stronger focus on social outcomes with increasing attention and nuance to how they are linked to climate hazards. PlaNYC 2007 and 2011 acknowledged economic growth and public health concerns in the context of air quality. In the aftermath of Hurricane Sandy, the OneNYC 2015 plan shifted significantly toward more explicit social framings of resilience, focusing on vulnerable neighborhoods, strengthening communities, and economic resilience to its climate adaptation initiatives. PlaNYC 2023 included the most explicit and nuanced social framing in the context of climate resilience, consistently drawing detailed connections between climate hazards and their impacts on New Yorkers that describe the lived experiences of people in the city. In PlaNYC 2023, climate change was commonly and expressly framed as posing threats to community health and safety. Personalized vignettes describing New Yorker's lived experiences in PlaNYC 2023 were an indication of institutional learning about how climate hazards affect people and relevant solutions.

Ecological

Notably, none of the plans include a strong emphasis on ecological framings of sustainability or resilience. Environmental strategies are a key dimension of sustainability and climate resilience, for example as key to mitigating the impacts of climate hazards. Yet the importance of conserving, protecting, and increasing the extent of the city's natural ecosystems and nature-based features was far less frequently discussed in all the plans compared to social and infrastructure related strategies. Although the plans include ecologically-focused strategies such as tree planting, green infrastructure, and nature-based solutions, the benefits are framed for humans and rarely focus on multi-species justice or the benefits to the ecosystem. While plans

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emphasize ecological benefits of these strategies for the public good, their importance for climate resilience and the rights of nature are overlooked, which can undermine resilience efforts.[46]

Sustainability and Resilience *to What*? Expanding Hazard Types and Contracting Challenges

In the face of increasing climate hazards, we ask, 'sustainability and resilience *to what*?' to assess the scope of climate hazards within the plans. Unsurprisingly, an expanded set of hazards are discussed with more nuance and specificity over time, evolving alongside major climate events and other climate-related planning and policy initiatives in the city (Figure 5). For example, in the face of increasingly long and hot heat waves, environmental justice advocacy groups advocated for specific heat-related measures to protect communities who face disproportionate exposure to and risk from high temperatures.[47] While earlier plans included strategies that mitigate heat impacts, like tree planting and green infrastructure, the rationale was focused on stormwater management, not heat. More recent plans take an explicit approach to addressing climate resilience for communities in the face of heat.

Similarly, the plans' approach to climate-related flooding hazards has progressed from addressing sea level rise to more comprehensive flood-related strategies that impact all parts of the city. The initial PlaNYC 2007 addressed sea level rise and coastal flooding, and given the consequences of Hurricane Sandy in 2012, that focus was maintained in later plans. In 2021, the devastation of Hurricane Ida brought heightened awareness of stormwater management and extreme precipitation, and its flooding of basement apartments placed the housing crisis and its intersection with climate change in even clearer light. Building on the city's experiences with these past severe coastal and inland flooding events and heat waves, PlaNYC 2023 included the most comprehensive overview of climate hazards to date. It considered, for example, different types of flooding, distinguishing between sunny day high tides, coastal storm surge, and extreme rainfall. This increasingly nuanced approach may help the City develop tailored strategies specific to each hazard and be better prepared for future climate events.

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[46] Schlichting, K. and Kuighadush, A.Z., "Heat Crises and New York City Government, 1995-2025"; Katinka Wijsman et al., "Rethinking Trade-Offs in Nature-Based Solutions from a Multispecies Justice Perspective," *Npj Urban Sustainability* 5, no. 1 (2025): 67, https://doi.org/10.1038/s42949-025-00261-5.
[47] Ortiz et al., "NPCC4."

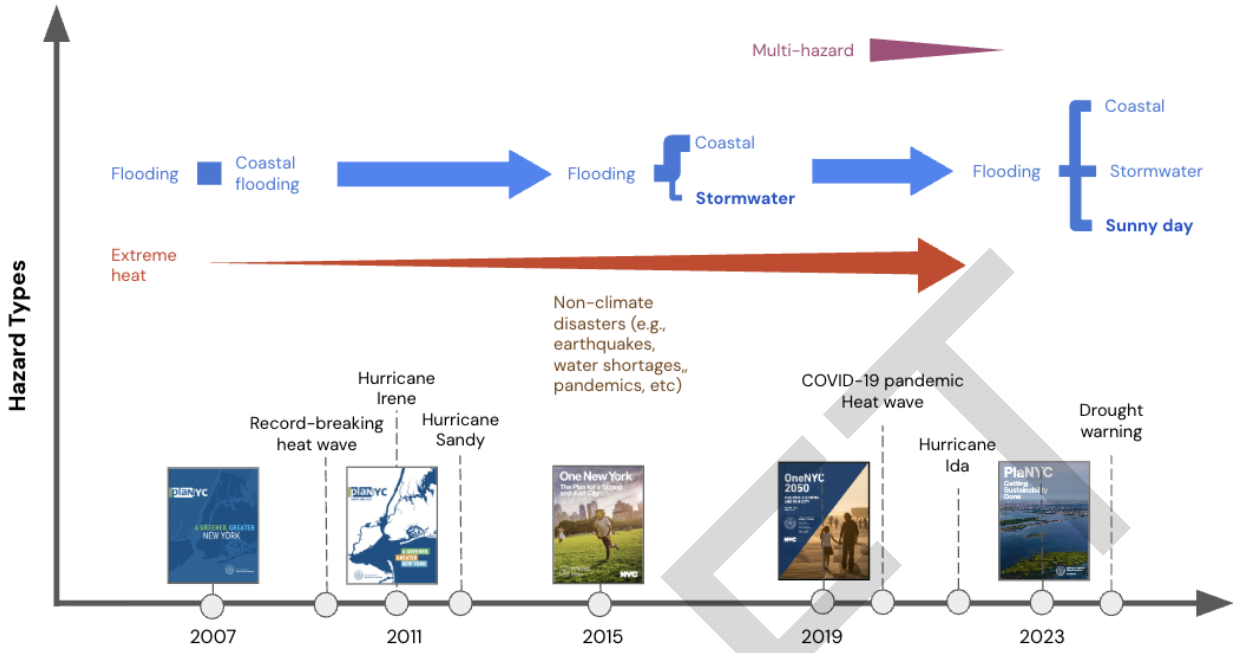


Figure 5. Changes in Hazard Focus Over Time

Multi-hazard planning is critical for cities to address the risk of compounding or co-occurring climate hazards.[48] Despite a growing recognition of compounding climate risks, mention of multi-hazards was relatively scarce across the planning documents. OneNYC 2019 was the first to acknowledge or use the term 'multi-hazard,' establishing an initiative to "use the best available climate science to inform a multi-hazard approach to climate adaptation."[49] Importantly, while separating out the different types of flooding, PlaNYC 2023 also recognized their "compounding risks." However, it is unclear whether this consideration extended to heat waves, drought, or other hazard types that may create cascading or compounding effects.

Sustainability and Resilience *for Whom*? Growing Incorporation of Equity and Environmental Justice

Finally, we assess the framings by asking "sustainability and resilience *for whom*?," to examine how the City addresses equity. Over time, the City incorporated an increasingly sharper focus on equity and environmental justice. Bloomberg's PlaNYC 2007 established a broad vision to create a city that is "fair, healthy, and sustainable," recognizing that "a healthy environment is not a luxury good, but a fundamental right."[50] With brief mention, the PlaNYC 2007 acknowledged vulnerable communities to climate and environmental hazards like coastal flooding, the urban heat island effect, brownfields, and poor air quality than others. Although the plan had a cursory

[48] Yaella Depietri et al., "Multi-Hazard Risks in New York City," *Natural Hazards and Earth System Sciences* 18, no. 12 (2018): 3363–81, https://doi.org/10.5194/nhess-18-3363-2018.
[49] City of New York, *OneNYC 2050: Building a Strong and Fair City*, 255.
[50] City of New York, *PlaNYC: A Greener, Greater New York*, 11.

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treatment of the equity and did not explicitly define or identify the populations it considered as "vulnerable", it outlined a strategy to engage vulnerable waterfront neighborhoods in community- and site-specific climate adaptation strategies. While a start, these early efforts left room for further improvement. Hurricane Sandy in 2012 was attributed as a catalyst for connecting climate change and inequality, where for example, "When Hurricane Sandy hit, environmental justice advocates pointed out how we couldn't think about physical vulnerability to climate change without thinking about local economics and inequality."[51]

Aligned with de Blasio's political platform, growing international attention to global inequality, and a strong environmental justice movement in NYC, OneNYC 2015 first explicitly introduced and defined equity, though narrowly.[52] While the plan recognized the historic inequitable distribution of environmental burdens for low-income communities, it did not emphasize procedural forms of justice, nor did it specifically recognize communities of color as facing environmental injustices.[53] Further, the plan missed opportunities to apply a strong equity framing to other challenges, like the city's aging infrastructure or the impacts of climate change. Related research confirmed a similar discrepancy in which strategies lacked specific actions to address equity or environmental justice concerns.[54] One practitioner at the Regional Plan Association commented, "A lot of lip service has been given to solving environmental justice…People are right to say, 'Let's see how the actions link up to the visions.'"[55] Such omissions and concerns signified an opportunity for the City to expand its definition of EJ and equity and foreground accountability.

The City continued to refine its conceptualization of equity and environmental justice. Extending beyond the 2015 OneNYC's distributive justice perspective, the 2017 Local Law 64 defined environmental justice along the dimensions of race, color, national origin, and income and added procedural justice and meaningful involvement as a desired outcome. OneNYC 2019 explicitly noted the historic and structural factors influencing current inequities and defined those populations as communities of color, migrant communities, and other frontline and marginalized communities. For instance, it describes how "racist, sexist, and classist policies of the past, and regressive current national policies, have left us with stubborn inequalities."[56] However, it was not always explicit about the actors responsible for perpetuating said inequities. It newly mentioned diversity and inclusion as guiding principles, and relied on stronger language around

[51] Juan Camilo Osorio quoted in Katherine Bagley, "New York Mayor Champions Economic Justice in Sustainability Plan," *Inside Climate News*, April 24, 2015, https://insideclimatenews.org/news/24042015/new-york-mayor-champions-economic-justice-sustainability-plan/.
[52] City of New York, *OneNYC: A Plan for a Strong and Just City*, 16.
[53] David Schlosberg, *Defining Environmental Justice: Theories, Movements, and Nature* (Oxford University Press, 2009).
[54] Fainstein, "Resilience and Justice."
[55] Rob Freudenberg quoted in Bagley, "New York Mayor Champions Economic Justice in Sustainability Plan."
[56] City of New York, *OneNYC 2050: Building a Strong and Fair City*, 17.

equity and justice, reflecting a more resolute stance on the subject in the context of the first Trump administration, which sought to undercut environmental justice aims.

Adams' 2023 PlaNYC added further nuance to the City's conceptualization of equity and environmental justice. For example, it provided a more explicit account of the actors responsible for past injustices, stating, "In the following decades, the City and State were building highways that ripped through communities of color and tore down their homes to clear the way for parks and other land uses."[57] It recognized the present-day, disproportionate impacts of extreme weather on communities of color and low-income communities and acknowledged that these same communities "have faced generations of systemic racism, disinvestment, and inequality."[58] Like the plans before it, it paid less attention to procedural justice compared to other dimensions of justice and the meaningful involvement of environmental justice communities. The evolved framing of equity and justice in the plans builds on the 2017 environmental justice legislation and the further mainstreaming in City policy, building on decades of partnership with environmental justice advocacy groups.[59]

INSIGHTS AND REFLECTIONS FOR FUTURE PLANNING

Here, we highlight key strengths and continuities in the City's sustainability plans, identify gaps, and offer forward-looking suggestions for addressing them.

1. Resilience and sustainability by whom? Continued cross-sectoral, interagency collaboration to foreground co-benefits of sustainability and resilience strategies

New York City's sustainability plans are increasingly integrating sustainability and resilience frameworks with more nuance and depth related to each. Further extending this trajectory of integration creates more opportunity for cross-sector collaboration. In addition, as noted by the NYC Panel on Climate Change, examining sustainability and resiliency factors holistically can offer new insights on promoting co–benefits and avoiding trade-offs or potential maladaptations of related strategies[60] Such assessments require continued efforts to bridge silos across sectors and government agencies to ensure they are leveraging one another to identify and achieve co-benefits as opposed to working in parallel or unintentionally working against one another. Continuing from early, precedent-setting efforts in the Bloomberg administration's plan for multi-agency convenings for plan development and the establishment of cross-agency task forces like the infrastructure-focused Climate Change Adaptation Task Force, the City has additional opportunity to establish sustained cross-agency collaboration to attain co-benefits and mitigate trade-offs.

[57] City of New York, *PlaNYC: Getting Sustainability Done*, 13.
[58] City of New York, *PlaNYC: Getting Sustainability Done*, 14.
[59] Sheila R. Foster et al., "NPCC4: Advancing Climate Justice in Climate Adaptation Strategies for New York City," *Annals of the New York Academy of Sciences* 1539, no. 1 (2024): 77–126, https://doi.org/10.1111/nyas.15148.
[60] Deborah Balk et al., "NPCC4: Concepts and Tools for Envisioning New York City's Futures," *Annals of the New York Academy of Sciences* 1539, no. 1 (2024): 277–322, https://doi.org/10.1111/nyas.15121.

2. Resilience and sustainability of what? Connecting climate to tangible, daily quality of life
NYC has more sustainability and resilience-related policies than other large US cities and was an early adopter of sustainability plans that evolved during administrations.[61] As the plans evolved, they shifted from a central focus on physical infrastructure to centering the lives and well-being of New Yorkers. Maintaining an emphasis on outcomes for livelihoods may serve to increase public acceptance and awareness of how resilience efforts can improve quality of life. Building on lessons learned, rising pushback, and a sense of fatigue towards climate terminology, the PlaNYC 2023 highlighted the story of a resident of NYC public housing who received a free air conditioning unit as part of the City's *Get Cool* program along with several more senior residents who had trouble getting to cooling centers on hot days.[62] This type of framing centers direct day-to-day outcomes to New Yorkers without less tangible terminology of climate resilience and sustainability. NYC's most recently elected mayor, Mayor Zohran Kwame Mamdani, campaigned on alleviating the everyday hardships for New Yorkers like the cost of childcare and rising rent. His successful grassroots campaign highlights the importance of centering problems relevant to other New Yorkers on a day-to-day basis. An opportunity exists to replicate this model and connect tangible improvements for quality of life to climate resilience and sustainability efforts in a way that resonates with New Yorkers.

3. Resilience and sustainability to what? Bridging climate and structural factors and taking a more proactive approach to climate planning
City plans could integrate approaches used in previous administrations that bring together a consideration of broader structural factors like economic inequality, education, and criminal justice reform that are explicitly linked to explicit, practical, and focused strategies to address climate resilience and sustainability. Examples could include strategies that integrate sustainability and resilience into school curriculums while more broadly seeking to improve access to quality education or strategies that mitigate exposure to extreme heat and poor air quality in prisons as part of wider reform efforts. These approaches may help to achieve societal co-benefits at greater scale.

The City's focus on climate hazards has evolved in response to the climate shocks it experiences, becoming increasingly nuanced as the city faces a growing and more severe set of hazards. The destruction from major climatic events exposes where city resilience efforts are needed, prompting large-scale, acute changes, but these changes are frequently made in rapid response and recovery mode. Anticipatory approaches help cities more proactively plan for hazards—especially those that have historically received less attention in planning—while accounting for

[61] Woodruff et al., "Is Flood Resilience Planning Improving?," 202.
[62] Gulnaz Anjum and Mudassar Aziz, "How Stories of Personal Experience Cut through Climate Fatigue in Ways That Global Negotiations Can't," *The Conversation*, November 25, 2025, https://doi.org/10.64628/AB.qq4rpv6d7.

uncertainty.[63] For example, while climate projections indicate that NYC could eventually face severe impacts from drought and fluctuating winter temperatures, these issues remain underrepresented in the City's planning.[64] Additionally, while the City has started to consider planning for multiple co-occurring or cascading hazards, it could further consider integrating a multi-hazard framing, impacts, risks, and strategies into its sustainability planning. Given the interconnected nature of different hazards, systems level, cross–sector interagency planning could help to identify effective strategies for multi-hazard resilience.[65] Generally, up-to-date climate projections through the NPCC are critical to informing anticipatory planning to ameliorate the negative outcomes that may occur if they are not integrated into planning. Strategies like the City's Climate Resilience Design Guidelines that account for long lead times of physical infrastructure help to establish long-term continuity and consistency for resilience and sustainability planning, while also enabling adaptability and flexibility according to building- and site-specific conditions. Similarly, legislation can help to institutionalize sustainability planning while remaining flexible to changing political, economic, and climate conditions.

4. Resilience and sustainability for whom? Continuing on the upwards trajectory of advancing environmental justice

Since PlaNYC's inception, the City has increasingly sought to embed and institutionalize equity and environmental justice into its sustainability planning efforts. A confluence of longstanding local environmental justice advocacy and international momentum around addressing inequality as part of its sustainability agenda during the 2010s brought equity into sharper focus. This focus was further legitimized through city legislation that required the City to conduct an assessment of environmental justice disparities and develop plans to address them. Building on this foundation, the City could continue to institutionalize equity considerations in its sustainability planning. Although sudden shock events like hurricanes can cause massive and visible damage to the city's physical infrastructure and threaten livelihoods, mobilizing large public responses, applying an equity lens to climate change exposes the more everyday and chronic, "hidden" impacts of silent hazards like extreme heat. Further, while the City has incorporated spatial datasets like the Heat Vulnerability Index to prioritize where to allocate its climate strategies, other forms of data could be drawn from to mitigate some of the limitations of spatial data. Proposed in the context of

[63] Tischa Muñoz-Erickson et al., "Beyond Bouncing Back?"; Karlijn Muiderman et al., "Four Approaches to Anticipatory Climate Governance: Different Conceptions of the Future and Implications for the Present," *WIREs Climate Change* 11, no. 6 (2020): e673, https://doi.org/10.1002/wcc.673.

[64] Luis Ortiz et al., "NPCC4"; Jorge E. González et al., "New York City Panel on Climate Change 2019 Report Chapter 2: New Methods for Assessing Extreme Temperatures, Heavy Downpours, and Drought," *Annals of the New York Academy of Sciences* 1439, no. 1 (2019): 30–70, https://doi.org/10.1111/nyas.14007.

[65] Katharina Hölscher et al., "Tales of Transforming Cities: Transformative Climate Governance Capacities in New York City, U.S. and Rotterdam, Netherlands," *Journal of Environmental Management* 231 (February 2019): 843–57, https://doi.org/10.1016/j.jenvman.2018.10.043; Rita Nerland et al., "Transforming Local Governance: Using System Leverage Points to Conceptualize Sustainability Transformations," *Sustainability Science* 20 (May 2025): 691–706, https://doi.org/10.1007/s11625-024-01618-y.

energy justice but applicable more broadly, Bell et al. propose the use of alternative, qualitative tools that measure aspects of procedural, recognitional, and reparative justice that would complement secondary quantitative assessments.[66] In a similar context, Boudet et al. contend that moving slower early on in the process of renewable energy infrastructure development instead of rushing or bypassing community engagement can lead to better project outcomes.[67] While these considerations are discussed in the context of energy development, the concepts are relevant for climate adaptation. Ultimately, prioritizing a planning process based on building trust with communities can contribute to more effective policy outcomes in the long term.

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[66] Shannon Elizabeth Bell et al., "Putting Metrics Last: A Decolonial Feminist Approach to Evaluating Energy Justice," *Journal of Political Ecology* 33, no. 1 (2026), https://doi.org/10.2458/jpe.7789.
[67] Hilary Boudet et al., "Going Slow to Go Fast: Public Response and Engagement in Renewable Energy Projects." *Nature Reviews Clean Technology* 1, no. 12 (2025): 877-889, https://doi.org/10.1038/s44359-025-00116-3.

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