Building Behavior Change into Government: GreeNYC and the Policy–Adoption Gap

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Overview

This chapter examines GreeNYC, New York City's sustainability behavior change program, as a response to the policy–adoption gap: the distance between what government mandates, funds, or makes possible and what residents actually do. Drawing on archival records, program evaluations, interviews, and firsthand experience, it traces GreeNYC's evolution from a public-awareness campaign into a research-driven marketing program designed to influence everyday behavior. The chapter advances two arguments. First, achieving environmental policy goals often requires more than regulation, incentives, and infrastructure investment. It also requires a distinct capability to understand and influence the voluntary behaviors on which those goals depend. Second, developing that capability is an institutional challenge as much as a methodological one. GreeNYC's experience demonstrates both the potential of research-driven behavior change marketing and the organizational conditions needed to implement and sustain it. The case offers lessons for cities seeking to integrate behavior change into public policy, particularly where government has limited authority to mandate individual action. It also illustrates the vulnerability of specialized capabilities that depend on individual leadership, informal partnerships, and unpredictable funding arrangements rather than durable institutional support.

1. The Policy–Adoption Gap: Why Good Policies Aren't Enough

Cities can adopt ambitious climate policies, invest in new infrastructure, and create programs to help residents make more sustainable choices. But these investments only deliver their full benefits when people actually change what they do.

For example, a city can build bike lanes, but their environmental benefits depend on people choosing to bike instead of drive. It can expand recycling services, but residents must use them correctly. It can offer incentives for energy-efficient appliances, but households must decide to take advantage of them.

The distance between what government makes possible and what people actually do is the policy–adoption gap. Closing this gap is essential to achieving many of the outcomes that environmental policies are designed to deliver.

This is not necessarily a failure of policy design. Rather, it reflects a fundamental challenge of governing: government can create the conditions for change, but conditions alone cannot always compel people to change their behavior. Even strong regulations, financial incentives, and infrastructure investments may fall short of their intended impact if people do not respond as expected.

The challenge is not new and not unique to New York City. The distance between adopted policy and realized outcomes has been a central theme of implementation research since Pressman and Wildavsky's study of federal programs in Oakland in 1973.[1] Studying education systems, Angrist and Dercon have documented how governments around the world often adopt policies faster than they develop the capacity

[1] Jeffrey L. Pressman and Aaron Wildavsky, *Implementation* (Berkeley: University of California Press, 1973).

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to implement them effectively.[2] GreeNYC offers a case study of one important dimension of this broader challenge: how cities can encourage the everyday behaviors needed to turn environmental policies and investments into measurable results. The policy–adoption gap is therefore one dimension of the broader implementation gap: it concerns how residents respond to policies and programs, rather than the full range of institutional factors that can impede implementation.

This issue was particularly relevant to PlaNYC, New York City's long-term sustainability plan. In some areas, the City had powerful tools to drive change. For example, it could require owners of large buildings to measure and report their energy use, conduct energy audits, and make upgrades to mechanical and lighting systems. But many other environmental outcomes depended on voluntary choices made by millions of individual New Yorkers – whether to conserve electricity at home, reduce waste, or choose public transportation over driving.

These behaviors could make a meaningful contribution to the City's sustainability goals, yet they were difficult or impractical to regulate directly.

Cities have traditionally addressed this challenge through three approaches, which can be used together but differ in how directly they seek to influence individual behavior:

1. Focus on what government could directly control. Concentrate on regulations, infrastructure, and programs, while accepting that many individual behaviors would remain largely outside the City's influence.
2. Give people information. Use public information and awareness campaigns to explain environmental problems and encourage residents to take action. While useful for building knowledge, this approach often assumes that knowing what to do is enough to change behavior. Policy scholars describe information as one of government's three basic tools – the "sermon," alongside the "carrots" of incentives and the "sticks" of regulation.[3]
3. Treat behavior change as a discipline in its own right. Go beyond providing information to understand why people behave as they do, what prevents them from making different choices, and what messages, incentives, tools, and interventions could help them act.

Research in behavioral science helps explain why the distinction matters. People's actions depend not just on what they know, but also on their motivation, their ability to act, and the opportunities available to them.[4] For example, telling someone that biking is good for the environment may have little effect if they don't feel safe riding in traffic, don't know a convenient route, or don't see biking as a practical option for their daily commute. Effective behavior change efforts must understand and address these barriers and speak to what matters to their audience, rather than simply telling them to do something or repeating environmental benefits or the city's policy goals.

GreeNYC represented a deliberate move toward the third approach. Rather than assuming that policies, infrastructure, and public education would automatically lead to changes in behavior, the City sought to

[2] Noam Angrist and Stefan Dercon, "Understanding Gaps between Education Policy and Practice," What Works Hub for Global Education Working Paper 2024/04 (Oxford: Blavatnik School of Government, University of Oxford, 2024), https://doi.org/10.35489/BSG-WhatWorksHubforGlobalEducation-WP_2024/04.

[3] Evert Vedung, "Policy Instruments: Typologies and Theories," in *Carrots, Sticks & Sermons: Policy Instruments and Their Evaluation*, ed. Marie-Louise Bemelmans-Videc, Ray C. Rist, and Evert Vedung (New Brunswick, NJ: Transaction Publishers, 1998), 21–58.

[4] Susan Michie, Maartje van Stralen, and Robert West, "The Behaviour Change Wheel: A New Method for Characterising and Designing Behaviour Change Interventions," *Implementation Science* 6 (2011): 42, https://doi.org/10.1186/1748-5908-6-42.

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apply research-driven marketing and behavior change strategies to help New Yorkers adopt more sustainable everyday practices.

This chapter makes two central arguments:

First, closing the policy–adoption gap requires a different approach to influencing public behavior. Cities must move beyond simply providing information and apply research-driven strategies that address what motivates people, what stands in their way, and what would make desired behaviors easier and more appealing.

Second, successfully putting this approach into practice requires the right conditions within government. Even well-designed behavior change strategies can fall short without the leadership, staffing, resources, decision-making authority, and organizational support needed to implement and sustain them.

Through the history of GreeNYC, this chapter examines both what it takes to influence public behavior and the institutional conditions that enable cities to do that work effectively.

Methodological note

This analysis draws on primary program reports, PlaNYC documents, annual PlaNYC progress reports (2008–2014), the OneNYC plan (2015) and Roadmap to 80 x 50 (2016), campaign completion reports and sponsorship agreements, research by Dalberg Global Development Advisors and GlobeScan, archival records, and interviews. The archival materials come from Rohit Aggarwala's Mayor's Office email and attachment archive (2006–2008), supplemented by a 2026 interview. The archive provides evidence of key decisions, chronology, and organizational arrangements, while the interview offers retrospective context. The archive is incomplete, covering only correspondence involving Aggarwala and excluding many telephone and in-person discussions.

The author served as GreeNYC Director from 2009 to 2017, overseeing its behavior change strategy, campaigns, and partnerships. This firsthand perspective is cross-checked against documentary evidence and interviews. Because the author led the program for most of the period examined, several program results reported here come from materials her office produced; the chapter identifies these as program-reported figures and notes where attribution is uncertain. Additional interviews conducted in 2026 with Amy Chester (Mayor's Office of Long-Term Planning & Sustainability), Willy Wong (NYC & Company Creative Director), and George Fertitta (NYC & Company President and CEO) provide insight into GreeNYC's early development, marketing, funding, and organizational evolution. Retrospective accounts are used to interpret and corroborate contemporaneous records, not replace them where recollections are uncertain.

2. From Awareness to Action: The Origins and Evolution of GreeNYC

From public support to individual action

The historical record reveals an important distinction between two early objectives: building public support for PlaNYC and encouraging residents to change their behavior. The first was a political and public engagement challenge; the second required understanding and influencing individual decisions.

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2006–2007: From an environmental identity to a public campaign

The GreeNYC name itself predates the campaign by nine months. Mayoral speechwriter Doug Bernstein coined it in September 2006 as the title of the environment section of the forthcoming plan, alongside OpeNYC for growth and MaintaiNYC for infrastructure; together the three names organized the plan's public brochure and the Mayor's December 2006 address.[5] Until January 2007, GreeNYC named a body of environmental policy, not a consumer campaign.

By early 2007, City officials were exploring how to encourage specific behaviors. On January 21, Rohit Aggarwala described plans for a public service campaign showing New Yorkers what they could do to be more sustainable, including a proposal to distribute coupons for free compact fluorescent light bulbs through Con Edison bills. He also suggested bringing these efforts together under the GreeNYC brand.[6]

A month later, replying to a Sustainability Advisory Board member who had urged a voluntary, Mayor-led campaign for energy-efficient bulbs, Aggarwala described their adoption as potentially contributing the "first 1–2%" toward the City's 30% emissions-reduction goal. While this was not a validated estimate of impact, it demonstrated that individual behavior change was being considered as a distinct contributor to PlaNYC's objectives.[7]

Although the name organized the December 2006 brochure and address, the original 2007 PlaNYC does not mention GreeNYC by name. Where it addresses behavior, it relies on prices, enforcement, and mandates: congestion pricing to shift drivers to transit, traffic enforcement to "change driver behavior," and incentives for building upgrades followed by requirements. Its closest antecedent to GreeNYC is Energy Initiative 7, "Launch an energy awareness and training campaign," to be run by a proposed New York City Energy Efficiency Authority. The initiative was aimed as much at building professionals as at residents. It warned that unless "the public and building professionals appreciate the urgency, are informed about the choices ahead, and understand the savings they can achieve," the City would not meet its goal, and it paired sector-specific awareness campaigns with training for building operators and certification for energy auditors.[8] It offered no strategy for how awareness would translate into individual action.

Aggarwala's account of this period is illuminating. He characterized the program's place in the 2007 plan as "only slightly more than a placeholder," noting that while there was early recognition of the importance of behavior change, the program's identity and approach had not yet been fully developed at the time of publication.[9] This distinction is instructive: identifying behavior change as a priority and determining how to operationalize it are related but distinct challenges, and the PlaNYC experience highlights the evolution from one to the other.

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[5] Sophia Hollander to Ann Harakawa et al. (Two Twelve and NYC Economic Development Corporation), email, September 24, 2006; Sophia Hollander to Rohit Aggarwala and Jeffrey Kay, email, October 10, 2006, both in Rohit T. Aggarwala personal email and attachment archive, 2006–2008, private collection (hereafter cited as Aggarwala Archive).

[6] Rohit Aggarwala to Gil Quiniones, email, January 21, 2007, Aggarwala Archive.

[7] Michael Northrop to Rohit Aggarwala, Ariella Rosenberg, Douglas Foy, and Daniel Doctoroff, email, February 20, 2007, and Aggarwala's reply of the same day, Aggarwala Archive.

[8] City of New York, *PlaNYC: A Greener, Greater New York* (New York: Office of the Mayor, 2007), 110.

[9] Rohit Aggarwala, interview by the author, March 23, 2026.

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Willy Wong adds a practical layer to this origin story. In addition to the broader communications architecture, he remembers an immediate need for a brandable mark that could appear on the City's emerging hybrid taxi fleet.[10] That utilitarian requirement helps explain why visual identity developed before a fully articulated behavior-change methodology: the program needed a recognizable public property before its strategic operating model had matured.



A surviving brochure shows PlaNYC's three sub-brands already in place six months before GreeNYC's public launch in June 2007, each assigned its own color and rendered in PlaNYC's stylized wordmark treatment: blue for OpeNYC and orange for MaintaiNYC, both drawn from the City's existing palette, and green – deliberately not an existing City color – for GreeNYC. According to Wong, when GreeNYC's visibility needs outgrew that treatment, the team decided against carrying the PlaNYC wordmark style forward on its own and instead folded the brand into the City's broader NYC identity program then in development. The mark that resulted, designed by an outside studio, paired the GreeNYC/NYC wordmark with a stylized apple; it rolled out on the hybrid taxi fleet, utility bill inserts, and out-of-home advertising alongside a then-unnamed campaign bird, which appeared in the June 2007 launch television spots and was later named and developed into Birdie.[11]

The campaign's content reflected this early stage. Its ten recommended actions – use public transportation, recycle, switch to compact fluorescents, carry cloth bags, unplug chargers, and the rest – were not derived from behavioral research: NYC & Company explained in May 2007 that it had "pulled the list as copy reference from the plaNYC website 'Take Action' section." Nor was the campaign ready for the plan's Earth Day release. After its launch date slipped repeatedly from late May, GreeNYC was announced on June 25, 2007.[12]

The limits of conventional policy instruments

The distinction between regulating institutions and influencing individuals was especially apparent in the building sector, which accounted for approximately 80% of New York City's greenhouse gas emissions at the time. The City's early energy strategies focused largely on building standards, owners, and institutional

[10] Willy Wong, interview by the author, September 7, 2026.

[11] Wong, interview; Ashley Jacobs (NYC & Company) to Rachel Webber, Roy Bahat, et al., email with storyboard attachment, June 5, 2007, Aggarwala Archive.

[12] Ashley Jacobs (NYC & Company) to Doug Bernstein et al., email, May 4, 2007, Aggarwala Archive; City of New York, *PlaNYC Progress Report 2008* (New York: Office of the Mayor, 2008).

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energy use. But these measures could not fully address the everyday energy consumption decisions of residents.

By March 2008, PlaNYC's draft annual report explicitly recognized this limitation, stating that reducing electricity consumption would require contributions from all New Yorkers and identifying GreeNYC as the City's public outreach response.[13]

As Chester recalled, there was a clear understanding that conventional policy could "only go so far." GreeNYC addressed the remaining challenge: how to motivate people to make choices that government could encourage but could not easily mandate.[14]

By 2011, PlaNYC more explicitly acknowledged the importance of individual behavior to achieving the City's sustainability goals. Its Public Engagement chapter recognized that "the countless choices that over 8 million New Yorkers make every day will determine whether New York truly becomes a greener and greater place." This positioned residents as active contributors to environmental outcomes alongside government action.[15]

Yet this recognition was not fully integrated across the plan. Although sectoral chapters identified household energy use, recycling, and transportation choices as important to achieving environmental goals, they generally emphasized regulation, infrastructure, and programs, with public outreach serving a complementary role. GreeNYC remained the City's primary vehicle for reaching residents at scale, but behavior change was not consistently articulated as a distinct policy instrument across PlaNYC.

The 2011 plan shows the gap on its own pages. It reported that a GreeNYC study had found individual actions could cut citywide greenhouse gas emissions by 9 percent, "a larger percentage reduction than any single public policy action or proposal included in this Plan." Yet its implementation tables listed "private funding" as the source for GreeNYC's energy campaigns.[16]

The contrast illustrates a central challenge: recognizing the importance of individual behavior does not necessarily translate into a systematic approach to influencing it.

From communications to behavior change

A defining feature of GreeNYC's evolution was the recognition that raising awareness and changing behavior are not the same thing. As Rohit Aggarwala explained, "communications is a very well understood concept, just get information out. But the behavior change piece is the thing that's a little more special for a sustainability team to recognize as its own distinct mechanism."[17] Traditional public information campaigns may increase awareness and understanding, but they do not necessarily motivate people to act.

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[13] Melissa Wright to Francis Barry, email with attachment "Energy section draft 080323.doc," March 23, 2008, Aggarwala Archive.

[14] Amy Chester, interview by the author, August 24, 2026.

[15] City of New York, *PlaNYC 2011: A Greener, Greater New York* (New York: Office of the Mayor, 2011), 174.

[16] City of New York, *PlaNYC 2011*, 175, 191. The 9 percent figure was a preliminary estimate. The study published in 2013 reports 7.5 percent: before publication the estimates were recalculated more conservatively, and to keep the calculation consistent the published total counts only the actions tested in the study's consumer survey (Roya Kazemi et al., *New Yorkers' Contributions to a Greener, Greater City: A Behavioral Impact Study* [New York: Mayor's Office of Long-Term Planning and Sustainability, 2013], 14).

[17] Aggarwala, interview.

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George Fertitta, then President and CEO of NYC & Company, described a related institutional challenge in a 2026 interview. "Every city has a press office," he observed, "but that's not the same" as marketing. While government communications typically focus on disseminating information and generating publicity, marketing brings a more sustained, audience-centered approach to action. Fertitta recalled that GreeNYC was conceived as a long-term campaign, built around a recognizable character and consistent identity rather than a series of announcements.[18]

In practice, GreeNYC's first campaigns, in 2007 and 2008, emphasized public education and broad environmental tips; the program had not yet developed the research, targeting and measurement practices needed to influence specific behaviors. By 2009 the campaigns were built as marketing. The air conditioning and lighting campaigns drew on desk research and interviews to define their audiences and messages, and both led with financial savings rather than with why sustainability mattered. What the program did not yet have was primary research or a way to measure behavior. Like most city marketing campaigns, and many in the private sector, the campaigns judged success largely by reach. The completion reports for the 2009 "Be Cool and Smart" air conditioning campaign and the 2010 "Switch & Save" lighting campaign both said that, because household energy savings could not be attributed to a campaign, GreeNYC had "determined that the best way to measure its campaign's effectiveness was to evaluate its reach," and they reported 861 million and 582 million media impressions.[19] Going beyond impressions, toward results that could be counted against PlaNYC's goals, reflected the Bloomberg administration's commitment to data-driven government. With one staff member and no evaluation budget, that required a dedicated research effort, and the author built monitoring and evaluation into the Behavioral Impact Study. The study did not change the program's direction so much as sharpen it, adding primary data for audience targeting, messaging and media planning, and a more rigorous method for measuring impact.

3. Building a Research-Driven Behavior Change Strategy

Grounding strategies in NYC-specific evidence

A defining principle of PlaNYC was that environmental policies should reflect New York City's particular conditions rather than simply replicate approaches used elsewhere. As Rohit Aggarwala recalled, California was often held up as a model, but its solutions did not always translate to New York. For example, free parking for hybrid vehicles might encourage cleaner car choices in a car-dependent city, but in New York, where most households did not own cars, it could unintentionally encourage car ownership and increase driving.[20]

GreeNYC eventually applied this same evidence-driven thinking to behavior change. With hundreds of potential actions residents could take to reduce their environmental impact, the challenge was determining which would deliver meaningful results and which New Yorkers would realistically adopt. Promoting too many behaviors risked diluting the program's impact and overwhelming its audience.

When the author became GreeNYC Director in 2009, this prioritization challenge became a central focus. The office's own 2010 progress report stated the problem plainly: GreeNYC was "not sufficiently data-

[18] George Fertitta, interview by the author, September 9, 2026.

[19] GreeNYC, "Be Cool and Smart" campaign completion report, December 30, 2009; GreeNYC, "Switch & Save" campaign completion report, May 26, 2010; City of New York, *PlaNYC Progress Report 2010* (New York: Office of the Mayor, 2010), 76.

[20] Aggarwala, interview.

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driven to be certain enough of its impacts" to count toward the City's 30 percent emissions goal, and doing so would require "a fact-based, market-research study" of the relative impacts of different actions and "the barriers to their adoption."[21] Building on the Bloomberg administration's emphasis on data-driven decision-making, GreeNYC commissioned the Behavioral Impact Study, conducted in 2010–2011 by Dalberg Global Development Advisors and GlobeScan. The study evaluated potential behaviors based on their environmental impact, feasibility, and likelihood of adoption, providing a research-based foundation for selecting the actions GreeNYC would promote.[22]

This marked an important shift from encouraging sustainable behavior broadly to identifying the specific actions with the greatest potential to deliver measurable results in New York City.

Behavioral and social marketing frameworks

Effective behavior change strategies begin by identifying which actions matter most, understanding why people do or do not take them, and designing interventions that address those barriers. This approach is well established in environmental psychology and social marketing. McKenzie-Mohr emphasized identifying barriers to sustainable behavior rather than relying on information campaigns, while Steg and Vlek outlined a process of selecting target behaviors, examining their underlying drivers, designing interventions, and evaluating results.[23]

The Behaviour Change Wheel, introduced by Michie, van Stralen, and West, provides a complementary framework.[24] Its central COM-B model identifies three conditions that influence behavior: capability (having the knowledge and skills), opportunity (having the practical and social conditions), and motivation (having the desire or reason to act). For example, a resident may understand the benefits of home energy efficiency but lack the financial resources, authority as a renter, or motivation to make improvements.



The Behavioral Impact Study

GreeNYC's Behavioral Impact Study (2010–2011) applied a similar evidence-driven approach, independently of the COM-B framework. The study:

- Assessed the potential greenhouse gas impact of more than 200 individual actions.
- Surveyed 2,149 New Yorkers to understand existing behaviors, motivations, and barriers.
- Prioritized behaviors and audiences based on environmental impact and potential for adoption, and developed messaging and media recommendations.

[21] City of New York, *PlaNYC Progress Report 2010*, 76–77.

[22] Kazemi et al., *New Yorkers' Contributions*.

[23] Doug McKenzie-Mohr, *Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing*, 3rd ed. (Gabriola Island, BC: New Society Publishers, 2011); Linda Steg and Charles Vlek, "Encouraging Pro-environmental Behaviour: An Integrative Review and Research Agenda," *Journal of Environmental Psychology* 29, no. 3 (2009): 309–17, https://doi.org/10.1016/j.jenvp.2008.10.004.

[24] Michie, van Stralen, and West, "Behaviour Change Wheel."

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- Established a framework for monitoring and evaluating results.

The study identified ten high-impact actions with the potential to reduce emissions by approximately four million metric tons of CO_2e, equivalent to 7.5% of citywide emissions and roughly one-quarter of PlaNYC's reduction target. These were estimates of potential impact, not reductions achieved by GreeNYC's campaigns.[25]

Importantly, the research demonstrated that effective strategies required more than identifying environmentally beneficial actions. They also needed to account for differences among audiences and what motivated people to act.

The study identified five behavioral segments: Inadvertent Greens (9%), Pragmatic Homeowners (17%), Young Urbanites (15%), Aspiring Greens (27%), and Skeptics (31%). GreeNYC marketing prioritized Aspiring Greens and Pragmatic Homeowners, representing 44% of New Yorkers, because they showed particular potential to respond to behavior change campaigns. The approach paralleled national research under way at the same time. Yale and George Mason University's "Global Warming's Six Americas" study, based on a 2008 national survey, divided Americans into six audiences by their beliefs, concern and behavior, and urged campaigns to target specific segments rather than an undifferentiated public. GreeNYC's segments were built around behavior and the likelihood of action in one city rather than national attitudes toward climate change, but the premise was the same.[26]

Motivations also differed by behavior. Saving money was a leading motivator for energy efficiency, while health was more influential for food-related choices. Environmental concern generally ranked second or third. These findings reinforced the importance of tailoring campaigns to the specific behavior and audience rather than relying on generic environmental appeals.

The study's contribution was both strategic and methodological: it provided a systematic way to select high-impact behaviors, identify audiences most likely to act, and develop campaigns around their motivations and barriers. In doing so, GreeNYC translated behavior change principles into a practical framework for citywide sustainability marketing.

The study's strategic significance

The study did more than select actions for promotion. It connected environmental impact estimates to the likelihood of adoption, the motivations and constraints of different audiences, and a framework for subsequent evaluation. In that respect, it supplied a method for translating sustainability goals into specific, research-informed interventions. Its modeled estimates should not be confused with realized emissions reductions, which required separate campaign-level measurement. The study shaped City policy right away. PlaNYC 2011 reported its finding that energy, air quality, and solid waste were the sectors where education campaigns could have the most impact and committed that GreeNYC would "be guided by that data."[27]

[25] Kazemi et al., *New Yorkers' Contributions*.

[26] Edward W. Maibach, Anthony Leiserowitz, Connie Roser-Renouf, and C. K. Mertz, "Identifying Like-Minded Audiences for Global Warming Public Engagement Campaigns: An Audience Segmentation Analysis and Tool Development," *PLoS ONE* 6, no. 3 (2011): e17571, https://doi.org/10.1371/journal.pone.0017571.

[27] City of New York, *PlaNYC 2011*, 175.

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4. Building Capacity Within Government

Understanding what GreeNYC accomplished requires examining how it was built. Its effectiveness was not simply the result of applying a behavior change methodology. It also depended on a set of organizational, political, and human conditions that are not typical within government and do not arise automatically.

Four factors were particularly important:

- establishing a distinct institutional home,
- recruiting a nontraditional skill set,
- building a resource model based on partnerships, and
- accumulating internal credibility through demonstrated results.

Institutional home

Establishing GreeNYC within the Mayor's Office was a critical design decision. This positioning allowed the program to operate across agencies rather than within a single departmental mandate, aligning behavior change efforts with multiple policy domains. It also signaled that the work was central to the City's broader sustainability agenda, rather than a peripheral communications function.

The practical effect was visible in GreeNYC's partnerships. Working from the Mayor's Office, the program partnered with the Department of Environmental Protection on a campaign encouraging New Yorkers to drink tap water, and with the Department of Sanitation on the Stop Junk Mail campaign to reduce paper waste from unwanted mail.[28] Both agencies funded the campaigns. In return, they gained three things most agencies did not have in-house: marketing expertise, a data-driven approach to choosing behaviors and audiences, and a brand New Yorkers already recognized, appreciated and trusted. Run separately, each agency would have used its own branding, and campaigns on water and waste would have reached the public as unrelated government messages. Because GreeNYC sat above individual agencies, one brand could carry both, and each campaign built on the recognition earned by the ones before it.

The same positioning opened doors outside government. A call to The Home Depot or Best Buy carried more weight coming from Mayor Bloomberg's office than it would have from a single city agency, which made it easier to start the conversations that became the Switch & Save and energy-efficient air conditioning partnerships. A program housed within any one agency could not have played either role.

Recognizing the need for a different kind of capability

Aggarwala recalled that the decision to establish GreeNYC as a standalone program, and to recruit specifically for private-sector marketing capability, grew directly from the recognition that voluntary behavior change required a different kind of intervention than the administration had previously built. Behavior change, he observed, was something "we knew had to happen" but that he "had not thought about much more deeply than that" by the time PlaNYC was published. It was the subsequent work on

[28] GreeNYC, "NYC Tap Water Education Campaign," one-sheet, July 13, 2011; City of New York, *PlaNYC Progress Report 2013* (New York: Office of the Mayor, 2013), 42.

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buildings that made the nature and scale of the need visible. Once visible, it became clear that the capability required was not one for which government typically hired.[29]

Chester's recollection makes the novelty of this staffing choice unusually concrete. She remembers a moment when the team concluded that what it needed was a "brand manager," adding that she had "probably never heard those words together before."[30] The comment is revealing not because brand management was novel in the private sector, but because it was not part of the standard vocabulary or staffing model of a municipal sustainability office. The hiring decision therefore represented an early institutional recognition that influencing voluntary consumer behavior required a capability different from conventional policy analysis or public information.

The difficulty of locating this profile is documented directly in the hiring record for the position that preceded the author's tenure. The GreeNYC Policy Advisor search, opened with a job description drafted in August 2007,[31] listed brand management as its lead responsibility and licensing-program development as a named deliverable – the vocabulary of commercial brand management rather than government communications or policy analysis. The role required end-to-end commercial marketing capability rather than a narrow communications specialty: research and strategy, brand stewardship, creative development, media planning, partnership management, execution, and licensing. This kind of end-to-end capability is uncommon in government. It also required the ability to operate with limited resources, building and executing campaigns without a dedicated budget.

The profile was applied in screening – one applicant was told in October 2007 that the office was "really looking for someone with more brand management experience" – but the search was equally shaped by the constraints of government hiring itself. In early November 2007 the office was ready to make an offer to its preferred candidate when a citywide hiring freeze, announced October 30, held it up pending budget approval; that candidate does not reappear in the record. Three other finalists withdrew, the last in February 2008 because the role "isn't senior enough" and "Bloomberg only has 2 years left." By February 23, Aggarwala had concluded that the $90,000 salary ceiling – itself bounded by internal equity with the manager to whom the post would report – might have to give: "we've now lost 3 candidates and we need to do something." The search continued through to the fall of 2008 when a qualified candidate was identified and an offer was made. The year-long search is a concrete illustration of the claim above: the capability GreeNYC required did not fit government's standard hiring channels – its salary scales, hiring procedures, and the shrinking horizon of a mayor's final term – and the gap between the brand's ambitions and the office's staffing capacity was a persistent structural constraint rather than a temporary one, both before and during the author's tenure.[32] The difficulty was not simply finding a qualified candidate. GreeNYC required a combination of marketing expertise and entrepreneurial initiative that conventional municipal job classifications, compensation structures, and hiring procedures were poorly equipped to attract.

[29] Aggarwala, interview.

[30] Chester, interview.

[31] "Policy Advisor, Promoting GreeNYC," job description, drafted August 27, 2007, Aggarwala Archive.

[32] Amy Chester to a GreeNYC applicant, email, October 15, 2007; Jeffrey Kay to Ariella Maron and Rohit Aggarwala, email, October 30, 2007; Ariella Maron to Rohit Aggarwala and Amy Chester, email, November 2, 2007; Amy Chester to Ariella Maron, Rohit Aggarwala, and Angela Sung, email, February 6, 2008; Rohit Aggarwala to Amy Chester and Ariella Maron, email, February 23, 2008, all in Aggarwala Archive; City of New York, *PlaNYC Progress Report 2009* (New York: Office of the Mayor, 2009).

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The author, who served as Director of GreeNYC, brought experience leading comprehensive marketing efforts in the private sector, including responsibility for research, strategy, creative development, and execution. Within GreeNYC, this translated into responsibility not only for market research and campaign development, but for developing the overall marketing approach, identifying and securing external funding partners, brand building and creative development, media planning, campaign activation and measurement. The effect of combining these roles into one position is hard to separate from other factors, including the administration's support and the timing of the Behavioral Impact Study, but it meant that research, creative development, and partnership negotiation were handled together rather than divided among agencies and vendors.

Creative funding and strategic partnerships

A successful component of GreeNYC's model was its ability to leverage media, funding, and partnerships to deliver meaningful impact despite severe resource constraints. From 2009 until fiscal year 2016, the program operated with one full-time dedicated staff person and no standing operating budget, assembling resources through a combination of philanthropic support, cross-agency collaboration, and private-sector partnerships aligned around shared goals. The author partially made up for the lack of staff with a steady flow of interns, Urban Fellows, NYC Service Fellows and volunteers.

Campaigns were built through targeted partnerships that aligned public objectives with partner incentives. Philanthropic funding from the Overbrook Foundation enabled the program's foundational research. City agencies such as the Department of Sanitation and the Department of Environmental Protection contributed programmatic alignment and funding. Private-sector partnerships played a central role in campaign execution: the Alliance of Automobile Manufacturers, through its EcoDriving program, supported the Turn It Off anti-idling campaign, The Home Depot partnered on the Switch & Save CFL campaign, and Best Buy supported the energy-efficient air conditioning campaign. Partners underwrote media and provided access to distribution channels. Across campaigns, this model generated more than 1.5 billion media impressions.[33]

The Home Depot partnership shows how these arrangements came together. The author identified the company as a good fit, contacted it cold, and worked with both its corporate government affairs and marketing departments to close the deal. Beyond potential sales and positive alignment with a green initiative, the company was opening a new store on West 23rd Street in Manhattan and was eager to host the campaign launch event there with the City.

The sponsorship agreements show how these partnerships worked. Corporate money did not go to the City directly. Sponsors donated to the Mayor's Fund to Advance New York City, a nonprofit that held the contracts on GreeNYC's behalf. Best Buy committed $175,000 in June 2009 for the air conditioning campaign, and The Home Depot committed $300,000 in February 2010 for Switch & Save. In return, each sponsor's logo ran on the campaign's subway, bus, and billboard placements, and its name was mentioned in radio spots. Each sponsor also offered City employees a discount (10 percent off Energy Star air conditioners at Best Buy, $1 off CFLs at The Home Depot) and agreed to promote the relevant product in its New York City stores, which carried the campaign to the point of purchase. The City kept control of the message. The Mayor's Fund held written approval over every material that used the GreeNYC marks, and Best Buy's review rights covered only the placement of its own logo. The donations also went further than

[33] City of New York, *Small Steps, Big Strides: Insights from GreeNYC* (New York: NYC Mayor's Office of Sustainability, 2017); Kazemi et al., *New Yorkers' Contributions*, 6.

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their face value: the program negotiated bonus placements and extended runs, and the two campaigns produced an estimated 861 million and 582 million media impressions.[34]

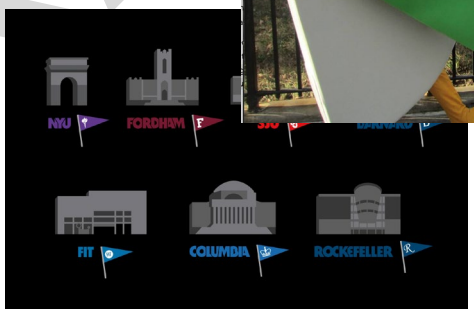
Free and low-cost media mattered as much as cash. The program negotiated bonus placements and extended runs on top of paid buys, secured donated space from media partners, used City-owned assets such as sanitation trucks to carry campaign ads, and placed messages in partners' own channels, from Home Depot stores to university closed-circuit televisions. Birdie's social media following and press coverage, described in Section 5, extended reach further at no cost. Each funding stream (philanthropy for research, corporate sponsorship for media, agency budgets for campaigns in their own domains, and eventually City funds) had to be found and negotiated separately. This resourcefulness was not incidental to GreeNYC's success. Without a standing budget, it was the condition for having campaigns at all.[35]

This resourcing model has roots that predate the author's 2009 tenure. In early 2007, NYC & Company's George Fertitta pitched Bank of America for $750,000 in founding sponsorship; the bank withdrew in late March, then signed on as a launch partner in April, for an amount the archive does not record. GE and Con Edison anchored the campaign's first programmatic partnership, around compact fluorescent bulbs, supplying a discount coupon distributed through Con Edison bills, and GE redid lighting in the Mayor's home ahead of his Earth Day remarks, while NYC & Company produced the creative and, with News Corporation and other media partners, secured donated placement for the initial out-of-home, television and print buy. In 2008 the program's partners included NBC Universal for an electronics recycling event, GE for CFL discounts, and Whole Foods and Macy's for reusable bags.[36] The pattern of assembling resources through corporate and philanthropic alignment, rather than appropriated budget, was therefore present in GreeNYC's design from its first months and continued, in modified form, through the partnership model described above.



Over time, this model produced a reinforcing dynamic. As campaigns demonstrated measurable results and the GreeNYC brand gained recognition, agencies and partners increasingly





[34] Sponsorship agreement between Best Buy Stores, L.P., and the Mayor's Fund to Advance New York City, June 2, 2009; sponsorship agreement between Home Depot U.S.A., Inc., and the Mayor's Fund to Advance New York City, February 2, 2010; "Be Cool and Smart" completion report; "Switch & Save" completion report.

[35] "Be Cool and Smart" completion report; "Switch & Save" completion report; City of New York, *Small Steps, Big Strides*, 26, 29.

[36] Alison Kling to Rohit Aggarwala, "FW: Final as of 3/9," March 12, 2007, with attachment "BOFA_031207_final.pdf"; Rohit Aggarwala to Jeffrey Kay, "GreeNYC campaign," and Kay's reply, March 12, 2007; Alison Kling to Rohit Aggarwala, "FW: Home Depot 1pm call info," and Aggarwala's reply, March 29, 2007; Connie A. Verducci (Bank of America) to Marc Ricks, "Update: GREEN NYC," April 9, 2007, preserved in Ricks's reply, cc Rohit Aggarwala; Peter O'Toole (GE) to Rohit Aggarwala et al., "RE: Earth Day press," April 20, 2007; Rohit Aggarwala to Douglas Foy, "CFLs," April 20, 2007; Alison Kling to Rohit Aggarwala, "GE proposal," April 24, 2007, with attachment "GREENYC_GE.pdf"; Rohit Aggarwala to Roy Bahat, "RE: GreeNYC ads," May 23, 2007; Ashley Jacobs to Rachel Webber, Roy Bahat, Rohit Aggarwala, et al., "RE: GreeNYC ads — CONFIDENTIAL," June 5, 2007, all in Aggarwala Archive. For the 2008 partners: City of New York, *PlaNYC Progress Report 2010*, 76.

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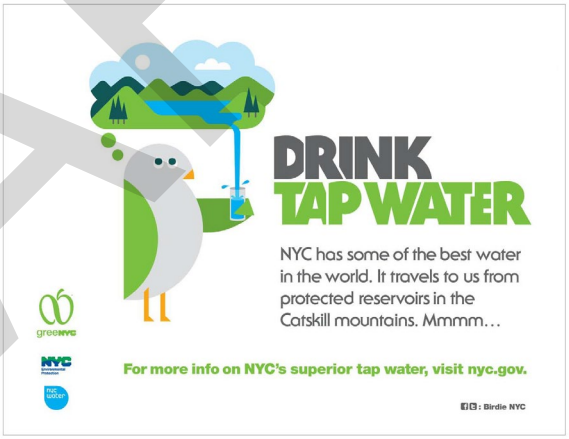
sought to collaborate in order to leverage that reach. Beyond the Departments of Environmental Protection and Sanitation, Birdie served as the face of Mulchfest, the Parks Department's annual Christmas tree recycling program, from 2011 to 2017. Universities in the Mayor's Carbon Challenge also partnered with the brand: in 2013 they placed GreeNYC prompts beside 17,500 dormitory light switches and sent GreeNYC-branded emails to roughly 95,000 students featuring animations, customized for each university, of easy ways students could cut their energy use, which also ran on closed-circuit TVs across campus.[37] In effect, the brand's credibility and effectiveness compensated for a lack of dedicated operating budget through demonstrated value and the ability to attract aligned resources.

Direct City funding and staff resources for GreeNYC followed rather than preceded proof of concept: only after several years of running campaigns without money, paired with post-campaign survey research demonstrating New Yorkers' favorable response to the brand, did the Mayor's Office approve a dedicated budget for the program. That budget, $1 million a year, began in fiscal year 2016 and was set in the City budget for ten years. OneNYC reported that One City: Built to Last, the administration's 2014 buildings plan, had allocated funding for new GreeNYC campaigns. Agencies had begun contributing their own funds earlier: the Department of Environmental Protection funded the 2011 tap water campaign, and the Department of Sanitation contributed $167,500 to the second phase of the Stop Junk Mail campaign in 2015. In the author's assessment, leadership turnover also slowed the budget. With seven directors of the program's home office in eight years (see Section 6), no one stayed long enough to become invested in GreeNYC and push for its funding.[38]



The organizational lesson

GreeNYC's organizational development illustrates a problem not resolved by behavior change theory alone. A method for identifying barriers, identifying and prioritizing audiences, and designing interventions is insufficient without a team skilled and equipped to implement it. The historical record points to the importance of institutional location, specialized expertise, flexible resource development, and relationships that allowed a small program to have an outsized impact.

5. From Research to Results: The GreeNYC Operating Model

From 2009 onward, under the author's direction, GreeNYC operated less as a communications program than as an applied behavior change system. Its theory of change departed from the informational model that dominates government practice. Rather than assuming that awareness leads to action, the program structured interventions to move from awareness to adoption through a range of steps: establishing social

[37] Author's records (Mulchfest); City of New York, *PlaNYC Progress Report 2010*, 76; City of New York, *PlaNYC Progress Report: Sustainability & Resiliency 2014* (New York: Office of the Mayor, 2014), 21.

[38] Author's records; City of New York, *One New York: The Plan for a Strong and Just City* (New York: Office of the Mayor, 2015), 285.

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norms, reducing perceived and actual barriers, aligning actions with motivations people already held – such as cost savings, health, or convenience – and providing a clear and immediate path to action.

Translating research into campaign decisions

The study's findings did more than select which behaviors to prioritize; they shaped every element of the campaigns built around them. Audience segmentation identified which New Yorkers were most reachable and receptive for each target behavior, directing where and to whom campaigns spoke. Barrier and motivation analysis for each behavior determined the messaging strategy: whether a campaign should lead with cost savings, health, or convenience, for example, depended on what the research found actually moved that audience. Media channel selection followed the same logic, matching how each segment could realistically be reached to where campaign resources were spent. Creative development translated those insights into specific executions – addressing the exact barrier identified for a given behavior, rather than producing generic environmental messaging. And because the study established baseline metrics and a framework for tracking behavioral and environmental outcomes, it made measurement possible from the outset, rather than retrofitted after a campaign had already launched. In this sense, the Behavioral Impact Study was not an input to a single decision, but the analytical backbone of the entire operating system described in this section.[39]



Switch & Save, launched in March 2010, predates the study and did not draw on it, but it shows the same logic in an earlier form. For the Switch & Save CFL campaign, GreeNYC's pre-campaign research identified three specific barriers: higher purchase price, insufficient knowledge of energy benefits, and concerns about unflattering light. The campaign's messaging, artwork, and partnership with The Home Depot were each designed to address one of these barriers explicitly. One execution, "Switch & Save Money," said that spending $1 or $2 more on a CFL would save $100 over its lifetime; another, "Switch & Save Face," promised soft white bulbs "that keep you looking good."[40] The resulting campaign generated 582 million media impressions, and the Behavioral Impact Study later reported a 12 percent increase in self-reported CFL purchases, an estimated carbon reduction of 56,700 metric tons of CO_2e and a 25 percent increase in CFL sales in the year after the campaign,



[39] Kazemi et al., *New Yorkers' Contributions.*

[40] "Switch & Save" campaign completion report.

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though this likely reflects a combination of factors beyond the campaign alone.[41]

The Stop Junk Mail campaign, launched in fall 2012 with a second phase funded by the Department of Sanitation in 2015, addressed friction. While many residents were receptive to reducing unwanted mail, the process for opting out was cumbersome. Creating a simple, centralized tool reduced that barrier, converting latent willingness into action and leading to large-scale adoption.[42]

Across campaigns, the program applied a consistent principle: identify the dominant barriers and motivations for a specific action and audience, address the barriers marketing can move (cost perceptions, missing information, inconvenience, social norms), and lead with the motivator most likely to drive action. Some barriers are beyond marketing's reach. No campaign can persuade a resident to bike to work without a safe route. GreeNYC's 2010 Bike to Work campaign ran after the City had built more than 620 miles of bike lanes; its job was to get people using infrastructure that already existed.[43] The 2010 PlaNYC Progress Report records when the program began working this way, in its own words: "in 2009, GreeNYC redesigned its communications to impact one behavior at a time."[44]

Brand as behavioral infrastructure

GreeNYC strategically used brand building as a behavior change mechanism rather than simply a visual overlay. Voice, tone, design, and language were treated as integral to how messages would be received, trusted, and acted upon. These elements were developed deliberately to build credibility and resonance at scale, recognizing that participation in voluntary behavior change depends not only on information, but on how that information is delivered.

Wong's account of the creative evolution helps explain why this mattered. He recalled that some early GreeNYC materials felt "very corporate" and did not fit the more "humanistic and friendly" direction the City was pursuing.[45] The creative brief, in practice, was therefore not simply to make environmental information attractive, but to make it feel approachable enough to enter everyday civic life.

Language was part of this design. Climate communication at the time, and often still today, relied on terms familiar to practitioners but not to the public, such as "metric tons of CO_2e," "energy efficiency upgrades" and "multifamily buildings."[46] Communicators rarely put themselves in the audience's shoes to ask whether those words meant anything to a lay reader. GreeNYC wrote from the audience's side, in everyday words tied to concrete actions, promising, for example, a mailbox free of unwanted catalogs rather than tons of paper waste avoided; in the program's own description, it set aside "complex and technical jargon" in favor of "fun and compelling calls to action."[47]

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[41] Kazemi et al., *New Yorkers' Contributions*, 27.

[42] City of New York, *Small Steps, Big Strides*, 29.

[43] City of New York, *PlaNYC Progress Report 2010*, 77; GreeNYC, "Bike to Work" campaign overview, 2010.

[44] City of New York, *PlaNYC Progress Report 2010*, 76–77.

[45] Wong, interview.

[46] On jargon as a barrier to public understanding, see Olivia M. Bullock, Daniel Colón Amill, Hillary C. Shulman, and Graham N. Dixon, "Jargon as a Barrier to Effective Science Communication: Evidence from Metacognition," *Public Understanding of Science* 28, no. 7 (2019): 845–53, https://doi.org/10.1177/0963662519865687.

[47] City of New York, *Small Steps, Big Strides*, 12.

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The December 2006 PlaNYC brochure discussed above provides a dated, concrete "before." Its GreeNYC section shows a photograph of a man wading through floodwater on a Brooklyn street, captioned "Imagine commuting by water (but only when you want to)." A text box above it warns that "rising sea levels and stronger storms will be just one way New Yorkers experience the effects of global warming," and asks residents to "conserve our city's resources and do our part to fight against climate change." The pairing was typical of environmental messaging at the time: a vivid threat, followed by a generic call to action with no specific step attached. Research has since shown why this combination tends to fail. O'Neill and Nicholson-Cole found that dramatic climate imagery grabs attention but leaves people feeling helpless and disengaged. Everyday, local images were the ones that made people feel they could act.[48] A meta-analysis of fear-appeal experiments found that threatening messages change behavior only when they also give people confidence that they can respond effectively. Without that, they tend to trigger denial and avoidance.[49] Appeals to guilt and shame, the other staples of the period, carry similar risks. In one experiment, people asked to anticipate pride in green choices reported stronger pro-environmental intentions than those asked to anticipate guilt.[50] Social marketing research has found that fear, guilt and shame appeals more often provoke self-protection and inaction than willing compliance.[51] This is the register GreeNYC's branding and messaging were built to move away from. The brochure preserves it in a dated, citable artifact, showing that the contrast does not rest on hindsight.



[48] Saffron J. O'Neill and Sophie Nicholson-Cole, "'Fear Won't Do It': Promoting Positive Engagement with Climate Change through Visual and Iconic Representations," *Science Communication* 30, no. 3 (2009): 355–79, https://doi.org/10.1177/1075547008329201.

[49] Gjalt-Jorn Y. Peters, Robert A. C. Ruiter, and Gerjo Kok, "Threatening Communication: A Critical Re-analysis and a Revised Meta-analytic Test of Fear Appeal Theory," *Health Psychology Review* 7, suppl. 1 (2013): S8–S31, https://doi.org/10.1080/17437199.2012.703527.

[50] Claudia R. Schneider, Lisa Zaval, Elke U. Weber, and Ezra M. Markowitz, "The Influence of Anticipated Pride and Guilt on Pro-environmental Decision Making," *PLoS ONE* 12, no. 11 (2017): e0188781, https://doi.org/10.1371/journal.pone.0188781.

[51] Linda Brennan and Wayne Binney, "Fear, Guilt, and Shame Appeals in Social Marketing," *Journal of Business Research* 63, no. 2 (2010): 140–46, https://doi.org/10.1016/j.jbusres.2009.02.006.

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GreeNYC's answer was Birdie, a friendly, optimistic character who became the face of the program. The graphic Birdie had appeared in GreeNYC ads and on promotional items since 2007; the costumed mascot made his public debut on March 2, 2010, at the Switch & Save launch at The Home Depot on West 23rd Street, where the City's press release announced a "New GreeNYC Mascot."[52] In the program's own words, Birdie is "neither an expert nor a taskmaster" and "never talks down to people" about why they should bring a water bottle or adjust a thermostat.[53] He was developed instead as a regular New Yorker taking simple steps to make his life and his city a little greener, "learning what works best, just like the rest of us." Because the messenger was a peer rather than an authority, joining in felt easier. New Yorkers were ready for that kind of messenger: in Mayor's Office surveys, the share naming "people like me" among those with the most potential to improve the city's environment rose from 34 percent in 2010 to 47 percent in 2015, nearly level with local government.[54] Pro-environmental behaviors seemed accessible and normal, and the program reached beyond residents who were already inclined toward "green" behavior.


Credit: Kristen Artz



Wong recalled bringing illustrator Todd St. John into the work because his character-based style could make the program more engaging and fun, and because it allowed messages to become shorter, simpler and more memorable. In Wong's telling, Birdie also solved a strategic platform problem. The City could use the same character for campaigns targeting behavior change across sustainability sectors (energy, water, transportation, waste, etc) without needing to build new engagement from scratch for every issue. Brand consistency built trust and deeper connection with New Yorkers.[55]

[52] Office of the Mayor, press release, March 2, 2010, reproduced in "Switch & Save" completion report.

[53] City of New York, *Small Steps, Big Strides*, 12.

[54] City of New York, *Small Steps, Big Strides*, 11.

[55] Wong, interview.

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The style guide reinforced this role through consistent application across channels. Birdie's simple, graphic look (oversized eyes, a green wing and signature curves), the customized, highly legible typeface, and consistent supportive language kept the focus on clarity and approachability. These elements set the tone and visual language for print, digital and event materials across paid, owned and earned media.

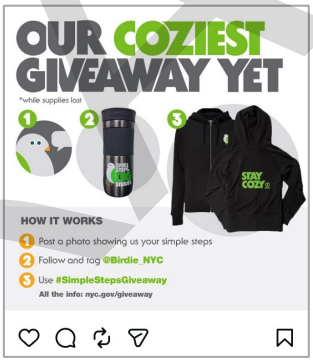
In addition, to promote engagement and earned media, Birdie's "personality" was further built out through his social media pages and at events. He posted on everything from his official duties to playing catch with his buddy from mascot school (Mr. Met) to baking at home and just regular life as a New Yorker. He showed up in person as a seven-foot costumed character in his professional capacity at official events, greenmarkets and community gatherings in all five boroughs as well as when he was off the clock sharing glimpses into his personal life and interests. His social media followers were engaged and even shared themselves taking action.













His social media pages also attracted the attention of the local media and led to press pieces. That coverage, in turn, raised awareness of GreeNYC and grew Birdie's social media following.[56] This character development was what made Birdie newsworthy. Government branding rarely earns press coverage, but a bird with a modeling job, a high-profile friend from mascot school and a love of taking staycations gave local reporters and bloggers a story, and gave New Yorkers a personality to follow. He built a following of devoted fans who sought him out at events, followed his adventures online and shared photos of themselves taking the actions he modeled. In 2011 the government networking site GovLoop featured Birdie's Facebook page as an "Awesome Government Facebook Page," calling him "Smokey the

[56] Roya Kazemi and Paul Hunt, *Marketing for Action: A Guide to Marketing Fundamentals for Urban Sustainability Offices*, 2nd ed. (Vision Flourish, with support from Bloomberg Philanthropies, 2021), 63.

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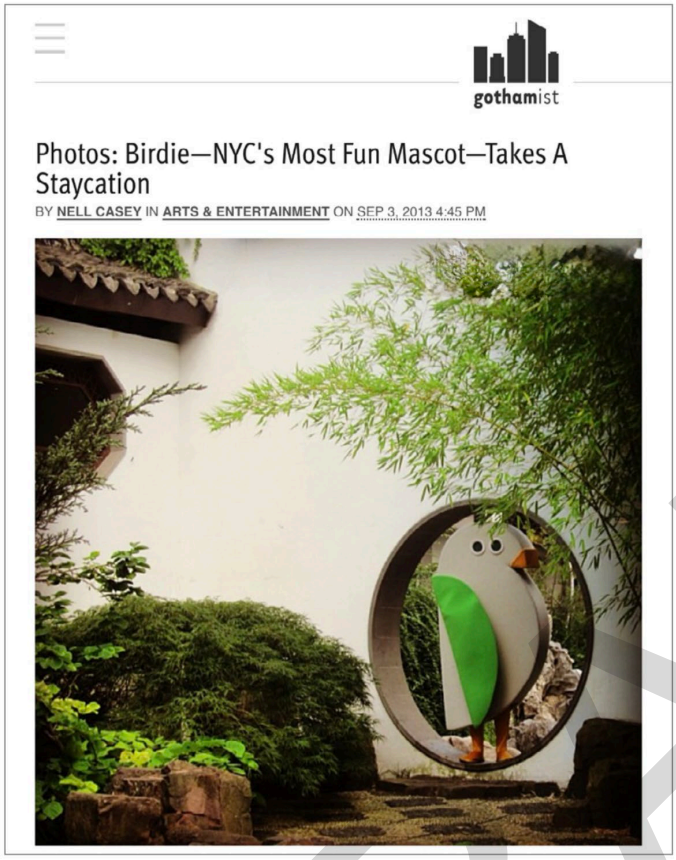
Bear 2.0." By 2013 the costumed Birdie had met more than 130,000 New Yorkers at public appearances.[57]



Together, these brand choices set GreeNYC's tone apart from traditional government communications, and audience research suggests it landed as intended. In a survey on the 2015 B.Y.O. (Bring Your Own) campaign, 74 percent of respondents said the campaign made them feel informed, 70 percent happy and 69 percent thankful. Fewer than one in five chose any of the negative options: bored, sad, annoyed or angry.[58] These numbers measure emotional response, not behavior. Still, they are the opposite of the helplessness and defensiveness the research above links to fear- and guilt-based appeals.

The same 2015 survey tracked brand recognition before and after the campaign. Familiarity with Birdie rose from 33 to 45 percent of New Yorkers, and familiarity with the GreeNYC logo from 47 to 53 percent. That level of recognition is striking in a city of more than 8 million residents, for a program that until then had one full-time staff member and no dedicated operating budget.[59]

Measurement: behavioral and environmental outcomes

GreeNYC also set out to measure behavioral outcomes and environmental impact alongside media reach. The framework developed through the Behavioral Impact Study organized evaluation into three tiers: awareness (e.g., media impressions and campaign recognition), behavioral response (e.g., self-reported actions, participation rates, and administrative or sales data), and impact (estimated environmental outcomes such as waste reduction or avoided emissions).[60]

This framework allowed GreeNYC to move beyond measuring campaign exposure to documenting behavioral responses and estimating associated environmental benefits. Although the evaluation methods generally could not isolate the campaigns' causal effects, they provided substantially more evidence of outcomes than media reach alone. For example, the Stop Junk Mail campaign led to New Yorkers opting out of more than 1.2 million mailings, reducing over 20 million pounds of paper waste. Catalog Choice, the

[57] Mayor's Office of Long-Term Planning and Sustainability, "Mayor's Carbon Challenge: University Students' Meeting," presentation, April 8, 2013, slides 17 and 19.

[58] GlobeScan, "GreeNYC's 'Bring Your Own' Campaign: Pre- and Post-Campaign Survey Findings," unpublished addendum, August 27, 2015 (question asked of the 1,608 respondents who recalled the campaign); City of New York, *Small Steps, Big Strides*, 13.

[59] GlobeScan, "Bring Your Own Campaign"; "Mayor's Carbon Challenge" presentation, slide 13.

[60] Kazemi et al., *New Yorkers' Contributions*.

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partner that processed the opt-outs, gave GreeNYC a dashboard tracking opt-outs and the associated carbon, water and waste savings, which made Stop Junk Mail one of the program's most precisely measured campaigns.[61] The "Turn It Off" campaign coincided with a 111 percent increase in 311 reports of idling violations during the campaign's peak, compared with the same period a year earlier, even as total 311 calls declined[62] – a measure of public engagement with the anti-idling rule rather than of reduced idling itself. The 2015 B.Y.O. campaign was also measured by direct observation: evaluators recorded the bags and cups of about 7,500 shoppers before and after the campaign. They found 2.9 percent more shoppers leaving stores without a bag, enough, if sustained for a year, to avoid an estimated 157 million plastic bags and 1,038 tons of waste.[63] These results do not represent precise attribution in a controlled experimental sense. However, the framework represents a meaningful shift toward outcome-based accountability.[64]

These results also reveal the limits of the evidence. Administrative records such as mail opt-outs provide relatively direct measures of participation, while sales changes, self-reported behavior, and increased complaint reporting require more cautious interpretation. In particular, a rise in idling complaints measures reporting activity, not a demonstrated reduction in idling. Most environmental outcomes are modeled estimates, not effects established by controlled comparisons. With a small team and limited evaluation resources, GreeNYC could rarely isolate campaign effects from other influences.

6. Implications for Policy and Practice

The GreeNYC case has implications for both how behavior change is designed within public policy and how it is implemented within government institutions. Taken together, these implications suggest that the primary barriers to effective behavior change are not conceptual but organizational.

The first implication is that behavior change must be treated as a core policy function rather than a secondary communications activity. Information alone is rarely sufficient to produce sustained behavioral change. The GreeNYC Behavioral Impact Study makes this clear: even in a city where 43 percent of residents expressed high concern about environmental issues, awareness did not consistently translate into action. Behavior change required interventions designed around specific barriers and motivations, not simply the dissemination of information.[65]

Policy authority and degrees of freedom

A second implication concerns the variation in regulatory authority across policy domains. As Aggarwala observed, "thoughtful policymakers have different degrees of freedom on different topics," distinguishing between areas where government holds near-total control – such as the building code – and those where it has very limited influence, such as individual consumption choices.[66] Between these poles lies a spectrum of partial authority, enforcement feasibility, and political viability that shapes what policy can realistically achieve.

[61] Author's records (Catalog Choice dashboard); City of New York, *Small Steps, Big Strides*, 29.

[62] City of New York, *PlaNYC 2011*, 127.

[63] Dalberg Global Development Advisors, "GreeNYC BYO Campaign Evaluation: Overall Impact Estimation and Methodology" (unpublished report, August 2015), 3, 9, 25, 32.

[64] City of New York, *Small Steps, Big Strides*, 8, 29.

[65] Kazemi et al., *New Yorkers' Contributions*.

[66] Aggarwala, interview.

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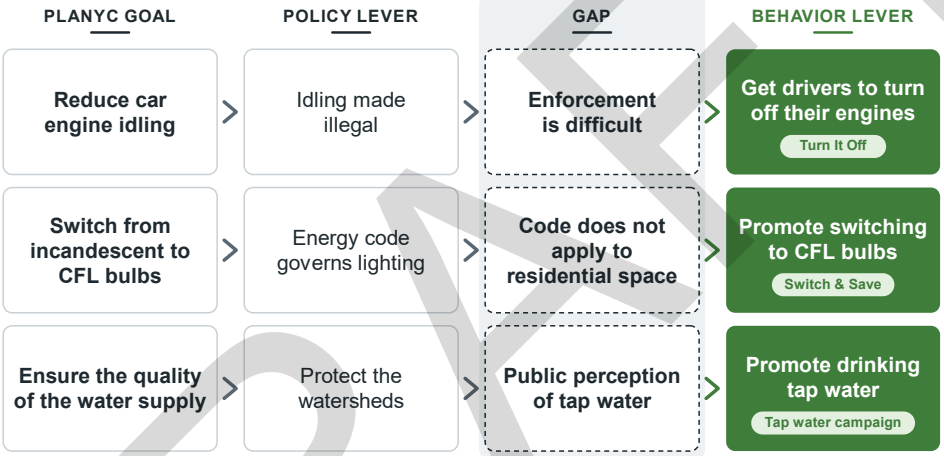
The policy–adoption gap is not uniform across this spectrum. In domains where mandates exist but compliance is uneven, the challenge is often one of enforcement and participation. In domains where regulatory pathways are limited or unavailable, behavior change becomes a primary mechanism rather than a supporting one. Programs designed to close this gap must therefore begin with a clear diagnosis of where they sit within this landscape. Interventions appropriate for a domain with enforceable rules but weak compliance (such as idling) differ fundamentally from those where no regulatory solution is available (such as residential lighting or food choices).

GreeNYC built this diagnosis into its planning. A 2013 program presentation set each target behavior against the City's policy lever and the gap it left. Idling was already illegal, but enforcement was difficult. The energy code governed lighting, but not in residential space. The City protected its watersheds, but public perception kept residents buying bottled water. Each campaign was designed to work where policy could not reach. By 2016 the City described GreeNYC's role in the same terms, as helping New Yorkers "realize policy goals or fill in the gaps created by absent or recently initiated policies."[67]



GreeNYC's analysis of where City policy left gaps that behavior change could fill. Adapted from Mayor's Office of Long-Term Planning and Sustainability, "Mayor's Carbon Challenge: University Students' Meeting," presentation, April 8, 2013, slide 11.

This has direct implications for how behavior change is positioned within a broader policy strategy. The GreeNYC case demonstrates that voluntary behavior change can function as a gap-filling layer within a mix of policy instruments – complementing regulation where it exists and substituting where it does not. In some cases, behavior change enables immediate action and builds familiarity with new practices; in others, it operates in advance of or alongside formal policy tools. The program's early work promoting compact fluorescent lighting, followed by the eventual phaseout of incandescent bulbs, illustrates how voluntary adoption and regulation can operate sequentially as part of a coordinated approach. Plastic bags followed a similar path. The B.Y.O. campaign ran in 2015, and in 2016 the City Council adopted a five-cent fee on carryout bags, which the City's 80 x 50 roadmap introduced as the next step, noting that billions of bags still entered the waste stream despite the campaign. New York State then blocked the City's fee in February 2017. A statewide ban on plastic carryout bags took effect on March 1, 2020, with

[67] "Mayor's Carbon Challenge" presentation, slide 11; City of New York, *New York City's Roadmap to 80 x 50* (New York: Mayor's Office of Sustainability, 2016), 110.

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a five-cent fee on paper bags in New York City, and enforcement began that October.[68] This does not mean behavior change replaces regulation or infrastructure: it can be the principal available intervention in some domains and a complement to other tools in others.

Taken together, this suggests that behavior change is not a substitute for policy, but a flexible instrument that operates differently depending on where formal authority begins and ends.

Implementation capacity as a binding constraint

GreeNYC's effectiveness depended on the ability to assemble capabilities that are not standard within government: cross-agency positioning, integrated marketing and behavioral expertise, a data-driven approach to marketing plans, nimble resource models, and the accumulation of credibility through demonstrated results. Where this capacity is absent, even a well-designed methodology cannot be executed: research can identify the right behaviors and the right messages, but without marketing expertise, resourcing, and institutional standing across agencies, that research has no path to becoming a campaign. Design and delivery are therefore not sequential steps but interdependent ones – a point that findings in other sectors reinforce: capacity gaps, not design gaps, explain much of the persistent shortfall between announced policy and realized outcomes, whether in climate policy broadly or in the specific case of municipal transit build-out.[69] GreeNYC's experience adds a further, more specific claim to this literature: the missing capacity is not generic administrative capacity, but a particular combination of marketing skill and government access that most cities never build.

Wong's description of how City creative work was accomplished illustrates one specific form this capacity took: resourcefulness as a deliberate practice rather than an improvised workaround. With limited formal resources, he emphasized the need to work through relationships, use whatever assets were available, and structure collaborations so that each participant could see a benefit.[70] This is consistent with GreeNYC's later operating model, in which resourcefulness was not an improvisational side effect of inadequate funding, but a practical competency – the specific skill required to make cross-agency and public-private implementation work in the absence of a dedicated budget.

George Fertitta's cross-city vantage point suggests this capacity gap is not specific to New York. Drawing on more than a decade advising city sustainability and marketing offices through Bloomberg Associates, he described the shortage of marketing – as distinct from press and communications – capability as a near-universal pattern: cities routinely have unfilled positions or underfunded line items for this function, sometimes to save money and sometimes because "the recruitment process is so onerous," and default instead to press offices whose function and skill set are fundamentally different. In his account, even modest

[68] City of New York, *Roadmap to 80 x 50*, 103; Associated Press, "Cuomo Blocks New York City Council Plastic Bag Fee," February 14, 2017; New York State Department of Environmental Conservation, "DEC Announces Enforcement of New York's Plastic Bag Ban to Start Oct. 19, 2020," *Solid Waste & Recycling Newsletter*, September 18, 2020.

[69] Timon Fransen et al., "Taking Stock of the Implementation Gap in Climate Policy," *Nature Climate Change* 13, no. 8 (2023): 752–55, https://doi.org/10.1038/s41558-023-01755-9; Nicholas Goedeking, "What Political Institutions Support Bus Rapid Transit? Evidence from a Survival Analysis of 92 Cities in Low- and Middle-Income Countries," *Energy Research & Social Science* 100 (2023): 103084, https://doi.org/10.1016/j.erss.2023.103084; Nicholas Goedeking, "Closing the Implementation Gap in Urban Climate Policy: Mexico's Public Transit Buildup," *Environmental Politics*, published online May 9, 2025, https://doi.org/10.1080/09644016.2025.2500188.

[70] Wong, interview.

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funding directed specifically at marketing capability – rather than communications – can be disproportionately effective precisely because so few cities build it deliberately.[71]

Leadership continuity is also part of capacity. Over eight years the author reported to seven directors of the Mayor's Office of Long-Term Planning and Sustainability, later the Mayor's Office of Sustainability. GreeNYC was largely left to follow its own plan, but each transition cost time: briefing a new director, responding to new priorities for the program, and sometimes pausing work already under way. The Behavioral Impact Study is one example. Its research was completed in 2011, but the report was not published until May 2013, a delay that tracks changes in the office's leadership. Turnover likely slowed the program's funding as well, since no director stayed long enough to champion a budget request. A second condition compounded the first. As the only person in the office with marketing expertise, the author received little substantive feedback from managers who did not share that background, so the program's direction depended on her being self-driven and proactive. Both conditions are common in small specialist units inside government, and both make a program's performance depend heavily on one person.[72]

The comparison with the United Kingdom's Behavioural Insights Team, created inside the Cabinet Office in 2010, is instructive. Both units brought behavior change inside government at roughly the same time, but through different disciplines. The Behavioural Insights Team drew on behavioral economics and randomized trials, redesigning letters, forms, and defaults that government already controlled; GreeNYC drew on marketing to influence choices government did not control. The difference matters for cities. Trial-based approaches work best where government owns the point of contact with residents, while much of the policy–adoption gap lies where it does not.[73]

Informal scaling and institutional credibility

A related implication concerns how programs scale within government in the absence of formal authority. Aggarwala described GreeNYC as something that "became a flywheel that got bigger and bigger," reflecting a pattern in which expansion was driven not by formal mandate or budget growth, but by the ability to demonstrate value in ways that other actors chose to adopt and support. The pattern is visible in the contemporaneous record within a year of launch: by early 2008, GreeNYC was fielding partnership and co-branding requests from a WABC radio host and the New York Power Authority's Auto Show press event, and discussing a "Great Green Way" co-branding effort with a Broadway theater trade association, alongside internal concern about off-brand use of the PlaNYC tagline on a city agency stormwater brochure – the kind of organic, opt-in demand for association with the brand that the "flywheel" description captures, arising well before the program even had a dedicated brand manager in place.[74]

This mode of growth differs from standard accounts of government program design, which emphasize formal structures, delegated authority, and appropriated resources. In the GreeNYC case, expansion occurred through informal mechanisms: agencies opted in rather than being directed, partnerships were

[71] Fertitta, interview.

[72] Author's observation; Kazemi et al., *New Yorkers' Contributions*, front matter (study conducted mid-2010 to 2011; report dated May 2013).

[73] David Halpern, *Inside the Nudge Unit: How Small Changes Can Make a Big Difference* (London: WH Allen, 2015).

[74] Aggarwala, interview; Stu Loeser to Rohit Aggarwala, email, and Aggarwala's reply, February 15, 2008; Carter Strickland Jr. to Amy Chester and Rohit Aggarwala, email, March 11, 2008; Amy Chester to Tom Ferrugia (Broadway.org), email, March 25, 2008; Rohit Aggarwala to Paraag Sarva and Brianna Wolf, email, March 27, 2008, all in Aggarwala Archive.

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formed around perceived value rather than requirement, and resources followed demonstrated effectiveness rather than initial allocation.

This suggests that behavior change programs may operate through a different scaling logic than traditional policy instruments. Rather than expanding through formal authorization, they can expand through adoption – growing as other actors choose to participate in and extend the model. This form of internal entrepreneurship – a variant of what policy scholars call policy entrepreneurship – depends less on hierarchical authority and more on the ability to generate credibility, align incentives, and sustain demand over time.[75] Finding funding streams and free media was the everyday form of this entrepreneurship. Each campaign required its own assembly of money, media and partners (see Section 4), and the ability to do that repeatedly mattered as much to GreeNYC's results as its research or creative work. Finding people was part of it too. Interns, Urban Fellows, NYC Service Fellows and volunteers extended a one-person staff and carried out much of the work on the ground, including Birdie's many public appearances across the five boroughs.

This was not an ideal model. In hindsight, a program like GreeNYC would be better served by securing dedicated resources first, then scaling further through partnerships that offer each partner a clear value.

Durability across political administrations

The GreeNYC case demonstrates that program effectiveness and program persistence are distinct. Behavior change initiatives built on trust, tone, and accumulated brand equity are not self-sustaining. They require ongoing leadership support to maintain coherence, brand integrity, visibility, and impact. The leadership turnover described earlier deepened this vulnerability: with no director in place long enough to become the program's advocate, GreeNYC had few internal champions when priorities shifted.

The program's trajectory across administrations illustrates this dynamic. While GreeNYC demonstrated measurable results and established a positively-received and recognizable public-facing platform, its prominence and resourcing declined after the author left her role in 2017. The shift did not reflect a change in underlying policy goals, which remained focused on sustainability and emissions reduction, but rather a change in how resident engagement was structured and prioritized within the broader policy framework. Over time, the centralized brand and campaign model that had defined GreeNYC was phased out.

George Fertitta's account offers related evidence from a different vantage point: not GreeNYC itself, but NYC & Company's broader role as an in-house marketing arm for city government. By his account, NYC & Company's close working relationship with City Hall – the relationship that had made GreeNYC's launch possible in the first place – also went cold under the subsequent administration, with "very little connection" between the two. That a similar discontinuity affected both a specific behavior-change program and the broader institutional capacity that had helped build it suggests the vulnerability described above may extend beyond GreeNYC to marketing-driven city initiatives more broadly: they depend on sustained executive sponsorship in a way that regulatory programs, once codified, do not.[76]

The transition to a new mayoral administration also revealed the vulnerability of behavior change programs that depend heavily on executive leadership. The vulnerability did not show at once. The de

[75] Michael Mintrom and Phillipa Norman, "Policy Entrepreneurship and Policy Change," *Policy Studies Journal* 37, no. 4 (2009): 649–67, https://doi.org/10.1111/j.1541-0072.2009.00329.x.

[76] Fertitta, interview.

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Blasio administration's 2015 OneNYC plan committed the City to continue "data-driven GreeNYC public education campaigns" and enlisted GreeNYC to promote new public water fountains, and its 2016 Roadmap to 80 x 50 devoted two pages to the program, calling it "a sophisticated marketing and data-driven program."[77] At the same time, OneNYC acknowledged that "we do not control all the levers" needed to achieve its goals, but emphasized broader frameworks of public engagement, civic participation, and equity rather than a dedicated behavior change strategy.[78] The decline began in mid-2017. Birdie was gradually removed from GreeNYC's social media, and his handle was changed from Birdie_NYC to GreeNYC. He was dropped from restocks of promotional materials, and the costumed mascot stopped appearing at public events. Within a short time the character had been removed from nearly all GreeNYC materials, and with him much of the brand equity and goodwill built over a decade. The messaging changed as well. It shifted to more traditional government climate messaging, leading with environmental appeals and setting aside the research-based tone, language and strategy described in Section 5. In the author's assessment, this gave up what had made GreeNYC thoughtful, distinctive and a model for other cities. The dedicated budget, set for ten years beginning in fiscal year 2016, was later cut during the Adams administration.[79]

This shift does not establish that behavior change work ceased or became ineffective. It does, however, show that the City's stated sustainability goals could remain in place even as GreeNYC's distinctive marketing approach and institutional identity diminished. This suggests changes in priorities and organizational support, rather than the disappearance of the underlying policy objectives, while leaving the precise causes unresolved. The case raises a question beyond how to build an effective program: how can cities preserve the capabilities needed to influence voluntary behavior across changes in leadership?

Transferability and limits

The GreeNYC model is transferable in principle, but not automatically replicable. Its core elements – research-driven prioritization, audience segmentation and targeting, strategic messaging design, and outcome-oriented measurement – can be adapted across contexts. These components provide a practical framework for designing behavior change interventions within policy environments. This transferability is not solely theoretical. Other cities, including Baltimore and Flagstaff, launched sustainability behavior change programs explicitly modeled on GreeNYC, and the author wrote *Marketing for Action*, a guidebook funded by the Urban Sustainability Directors Network (USDN), to help city sustainability offices plan and implement comparable programs – evidence that the framework has already traveled beyond its originating institutional context, even as the discussion below cautions against treating that travel as automatic. The guidebook was developed with staff from six USDN cities, Baltimore and Flagstaff among them, and drew on feedback from more than 50 USDN members. Its first edition, published in 2017, was used by dozens of cities across North America, and USDN gave ten member cities funding and consulting hours from the author's firm, Vision Flourish, to apply it. Its reach led to a second edition four years later, in 2021, supported by Bloomberg Philanthropies' American Cities Climate Challenge, which documented the framework's use in eight more cities: Boston, Cincinnati, Columbus, Honolulu, Los Angeles, Orlando, Saint Paul and Washington, D.C.[80]

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[77] City of New York, *One New York*, 175, 204; City of New York, *Roadmap to 80 x 50*, 110–11.

[78] City of New York, *One New York*, 10.

[79] Author's observation and records.

[80] Roya Kazemi, *Marketing for Action: A Guide to Marketing Fundamentals for Urban Sustainability Offices* (Vision Flourish in partnership with the Urban Sustainability Directors Network, 2017), 2–4; Kazemi and Hunt, *Marketing for Action*, 2nd ed., 2, 4.

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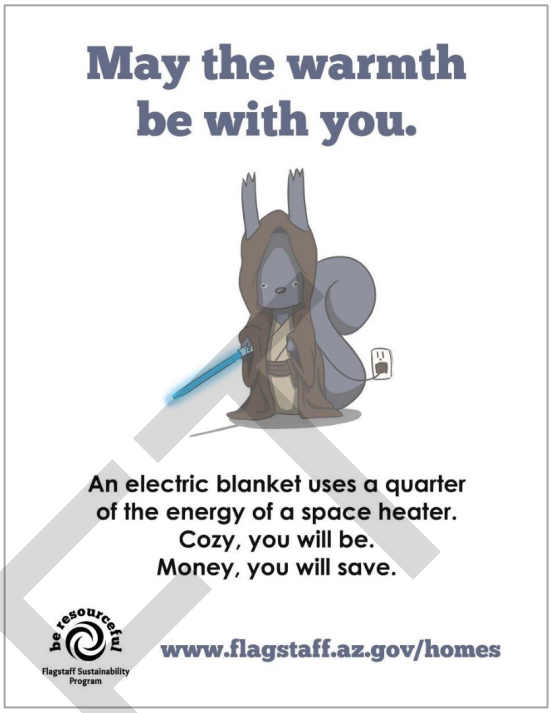
Baltimore and Flagstaff also adopted GreeNYC's most distinctive device: a friendly character as the face of the City's sustainability work. Baltimore's Office of Sustainability introduced Turtle (left) in 2014 as its full-time "Sustainability and Resilience Messenger." Like Birdie, Turtle was written as a regular resident: born in Baltimore, shopping at the farmers market on Sundays, riding to work when the weather allows and taking transit to visit family, while sharing tips that save money and cut emissions at home, at work and on the go. Turtle appears with the mayor at press events, serves as the face of the office's campaigns, and a decade later was still representing the office at events and on social media. In 2015 Flagstaff, Arizona, introduced Albert (below), an Abert's squirrel, the tassel-eared species native to the city's ponderosa pine forests. The City describes him as a lifelong Flagstaff resident with "a lot of questions" about how to make the city better, learning alongside residents as he discovers small ways to be more resourceful: the same peer-not-expert stance as Birdie. Albert appears at Earth Day and other community events, with volunteers recruited as his handlers, and on reusable bags and outreach materials. The lineage is direct. While developing Turtle, Baltimore's team called the author for advice and had the costume produced by the same company that made Birdie's, and Flagstaff's staff told the author that Albert was directly inspired by Birdie. Both characters have since outlasted Birdie's own run as the face of GreeNYC.[81]



However, the case also highlights the limits of methodological transfer. The effectiveness of the model depended not only on its design, but on the organizational conditions that supported it: cross-agency positioning, specialized skill sets, adaptive resource models, and sustained leadership backing. Without these conditions, the same methods are unlikely to produce comparable results.

Lessons for cities

GreeNYC's experience suggests eight practical steps for cities seeking to establish and sustain behavior change capacity:

[81] Baltimore City Office of Sustainability, *2014 Annual Sustainability Report* (Baltimore: Office of Sustainability, 2015), 60–61; Baltimore Office of Sustainability, *2023 Sustainability Annual Report* (Baltimore: Office of Sustainability, 2024), 2, 5; City of Flagstaff Sustainability Office, "Albert," accessed November 11, 2026, https://www.flagstaff.az.gov/2992/Albert; City of Flagstaff, "Earth Day Celebration," accessed November 11, 2026, https://www.flagstaff.az.gov/1439/EarthDay. Baltimore's consultation and costume maker, and Albert's 2015 launch and origin: author's firsthand knowledge. Albert is also featured in the guidebook: Kazemi, *Marketing for Action* (2017), 46.

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1. Treat behavior change as a policy tool, and place it where it can work across agencies and sectors. A unit in the mayor's office or a central sustainability office can serve energy, water, waste, and transportation goals; one inside a single agency tends to serve that agency's.
2. Provide dedicated funding and specialized staff, with compensation capable of attracting experienced marketers. Budget for research, strategy, creative development, partnerships, and measurement. Use partnerships to expand this base, not replace it.
3. Prioritize behaviors through research. Select actions based on potential impact and adoption, identify audience motivations and barriers, and distinguish what marketing can address from what requires policy or infrastructure.
4. Communicate in residents' language. Use clear, everyday terms, emphasize tangible benefits such as savings, health, and convenience, and avoid relying on guilt, fear, or technical jargon.
5. Build a brand people like, and track it. A consistent, friendly brand and messenger create trust with your audience and greater buy-in from potential partners. Measure recognition and sentiment over time, and use the results to make the case for greater resources to managers and partners.
6. Measure action, not only exposure. Establish baselines and track behavioral and environmental indicators, using observed, administrative, or sales data where feasible and acknowledging attribution limits.
7. Design mutually beneficial partnerships. Combine funding streams, negotiate donated and bonus media, and use City-owned assets and partner channels without relinquishing control of public messages.
8. Protect continuity across administrations. Establish a stable reporting line, budget, written mandate, and external constituencies that can help preserve the function when leadership changes.

Conclusion

GreeNYC demonstrates how cities can address the policy–adoption gap by treating behavior change as a distinct policy capability rather than a conventional communications function. Its contribution was not any single campaign or marketing technique, but the integration of research, audience targeting, creative strategy, brand building, partnerships, and outcome measurement into a systematic approach to influencing voluntary behavior. The program showed how government could extend the reach of regulation, incentives, and infrastructure by addressing everyday decisions on which many policy outcomes depend.

The case also reveals that building this capability is as much an institutional challenge as a technical one. GreeNYC's development depended on specialized expertise, cross-agency positioning, entrepreneurial resource development, and credibility accumulated through campaigns. These conditions enabled a small program with limited resources to document meaningful behavioral responses, but they also created vulnerabilities. Reliance on one dedicated staff member, negotiated partnerships, and sustained leadership support made the program difficult to institutionalize.

GreeNYC's subsequent decline illustrates a distinction between program results and institutional durability. Although the City's sustainability goals remained in place, the program's distinctive marketing approach, established brand, and dedicated resources were gradually reduced. The available evidence does not establish precisely why these changes occurred, but it shows that documented results and public recognition alone were insufficient to preserve the capability the City had built.

For cities seeking to adapt this approach, the lesson is twofold: invest in research-driven behavior change strategies and build the structures needed to sustain them. Dedicated staffing, stable funding, cross-agency

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authority, and leadership support are not optional administrative arrangements; they are essential to the intervention's implementation and continuity.

The broader implication extends beyond environmental policy. Wherever public outcomes depend on voluntary individual action, government must consider not only what policies make possible, but how people can be encouraged and enabled to act. Closing the policy–adoption gap requires both an understanding of behavior and the institutional capacity to influence it. GreeNYC illustrates the potential of combining the two – and the risk of allowing that capacity to depend on individual initiative rather than enduring public institutions.

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