

Reducing Waste on New York City Public Housing Grounds



Applying a behavioral lens to redesign the trash disposal infrastructure

Quality of life concerns arising from the improper disposal of household trash, litter, and dog waste are widespread among New York City Housing Authority (NYCHA) residents. However, official policy for trash disposal is often unclear, and options for disposal are confusing or inconvenient. We redesigned the trash disposal infrastructure to reduce ambiguity and burdens of proper disposal for residents, leading to a significant decrease in visible trash on NYCHA grounds.

Summary

NYCHA is the largest manager of public housing in North America, and provides housing to 1 in 15 New Yorkers. As part of a series of community-based research activities conducted via the Mayor's Action Plan for Neighborhood Safety, the Mayor's Office of Criminal Justice (MOCJ) sponsored a partnership with ideas42, NYCHA, and the Research and Evaluation Center at John Jay College to address quality of life concerns for New Yorkers living in public housing developments. One widespread and highly visible concern for residents is related to the improper disposal of household trash, litter, and dog waste on NYCHA grounds, which we found significant evidence for during visits to NYCHA developments in three boroughs (Brooklyn, Bronx, and Manhattan).

Trash is a constant presence in NYCHA developments. Residents complain that collections of trash left in hallways, staircases, and outside the main door of their building makes the areas smell bad and attract rats.

Development caretakers share in their frustration, reporting they are often unable to complete all their work duties because of the time spent clearing trash. Piles of large trash items can be found in front of many buildings, even when signs are posted urging tenants to place bags elsewhere, and litter is widespread. Dog waste left on NYCHA property was consistently reported across developments, on sidewalks, in the grassy areas, and indoors. Residents and non-residents alike often let their dogs roam around the NYCHA development property without a leash, and then fail to remove their dogs' waste. This also led to some negative misperceptions around the behavioral tendencies of NYCHA residents, which our intervention sought to correct.

Highlights

- ▶ Behaviors such as littering and improper disposal of household trash can benefit from a looking through behavioral lens to see why they occur.
- ▶ Understanding and acting on people's lived experiences is critical for designing impactful solutions.
- ▶ Systems that make it easier for people take desired actions can change behavior, even absent enforcement.

Why so much trash?

We conducted in-depth interviews with over 50 NYCHA residents and staff to better understand what is driving these problems, as well as to gain a deeper understanding of the context. These interviews yielded a few common insights:

- ▶ **Most residents use modern large trash bags, which do not fit in the buildings' outdated trash chutes.** Residents who use these trash bags have to choose between improper disposal of their trash, or carrying it an inconvenient distance (up to 15 minutes away) to a dump site approved for larger items.
- ▶ **In the absence of policy or infrastructure solutions, residents have developed their own norms for trash disposal.** Residents follow the community norm to dump trash at convenient locations close to their buildings. While posted signs discourage this behavior, both residents and staff recognize that it is the only convenient alternative.
- ▶ **Even a small amount of trash is salient.** Because of the high population density of NYCHA developments, even a small percentage of people throwing their trash or litter away improperly results in a substantial amount of visible trash. This results in misperceived social norms (“Everyone litters”) that demotivate residents to dispose of trash properly.
- ▶ **Small hassles can undermine good intentions to pick up dog waste and have a big impact on outcomes.** Even when people are motivated to clean up after their dog, doing so requires that they have easy access to plastic bags for picking up the dog waste, and outdoor trash cans for quick deposits.
- ▶ **Unenforced fines exacerbate problematic behaviors.** Signs that warn people who violate litter, trash, and dog waste disposal laws can be prosecuted and fined are posted on NYCHA properties. But these fines are not—and cannot be—effectively enforced. Presenting these choices primarily in the context of fines discourages peoples’ intrinsic motivation to take care of the shared environment.

Solution

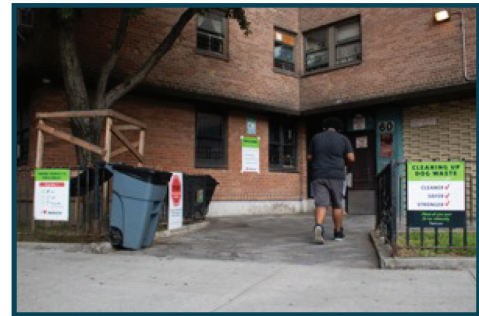
With the insights gleaned from our conversations with NYCHA residents and staff in mind, we created three design principles to guide our efforts to improve trash disposal on NYCHA sites.

1. trash disposal should be easy and convenient
2. messaging from the administration and signage should be prominent and very clear
3. efforts to motivate residents should be predicated on their intrinsic values, not their desire to avoid penalties.



We worked with NYCHA staff to develop a set of interventions, and showed early versions to NYCHA residents to make sure we incorporated their feedback.

Our final package of solutions consisted of two main components: a change to the physical infrastructure, and new messaging. The first included **installation of large, moveable trash containers (tilt trucks) and trash cans in convenient locations**. This infrastructure change meant that trash disposal, especially for large trash bags, would be much more convenient for NYCHA residents. To complement these physical changes, **a package of posters to inform people of the new policy and encourage them to use the new infrastructure** were placed indoors and outdoors on NYCHA grounds. These posters gave residents guidance for disposing different types of trash, reminded dog walkers to bring pick-up bags, and discussed unpleasant effects resulting from improper disposal. It's important to note that previous communication had only told residents *what not to do*, with the desired behavior often unspecified (e.g. people were told not to put trash bags in locations, but not told where to put them). The new signs gave guidance about what residents *should do*, recognizing that people are motivated to take care of their environment. NYCHA property managers were given guidance on the placement of posters and suggested locations for installing trashcans and tilt trucks, but were ultimately allowed discretion concerning the best placement of these items for residents and maintenance staff.



Results

The effectiveness of these designs was tested in a randomized controlled trial. 27 NYCHA developments were selected to receive the intervention package during the summer of 2019, while 26 similar sites served as the control group. A team of research assistants monitored counts of trash, litter, and dog waste visible at all sites over a 4-month period, covering before and after the intervention was implemented so that we could measure changes in improper disposal behavior.

Our evaluation revealed significant decreases in the amount of trash visible at NYCHA developments after they received the intervention package. **The average number of household trash bags left outside decreased by 25%, the average number of litter pieces on grounds decreased by 16%, and the average instances of dog waste spotted decreased by 11%**, compared to the control groups. We found the intervention had the strongest effect on sites that were dirtier than average at baseline, suggesting that basic resource provision may be



sufficient for impact in some sites, whereas others likely require more tailored, robust upgrades to show impact.

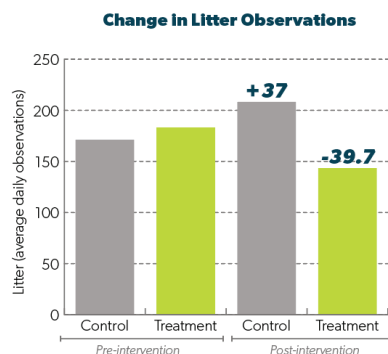
Despite measurable change in the objective amounts of trash, litter, and dog waste on intervention sites, there was no measurable impact on the perceived amount of each indicator among surveyed residents, or overall quality of life.

Takeaway

Providing easier access to trash disposal infrastructure, complemented by clear behavioral communications, significantly reduced the amount of trash, litter, and dog waste visible on the grounds of NYCHA developments that received our intervention. This demonstrates that new structures and resources can create real behavioral change, and suggests that quality of life issues may be driven by a lack of available channels or socially and environmentally conscious behaviors, rather than by any inherent behavioral tendencies. Previously, residents did not have a clear option for proper disposal of standard kitchen trash bags. Providing a new, easy to use option reduced undesirable behavior.

What’s more, this work underscored that the NYCHA community is a valuable resource in designing new infrastructure. NYCHA residents are eager to improve their community and provided critical feedback throughout this project. However, many felt that their concerns were not consistently heard by NYCHA administration. Robust infrastructure that caters more to the needs of NYCHA residents can create measurable change, a first step to improving overall quality of life. The infrastructure and communication interventions tested here serve as a proof of concept for this, and further efforts to involve the community in the placement, rollout, and promotion of future infrastructure changes in this vein would likely have greater impact. Understanding and acting on the lived experiences of people is necessary for designing interventions that can improve their lives.

LITTER
decreased by 16%



DOG WASTE
decreased by 11%

