



Greening Infrastructural Services: The Case of Waste Management in San Francisco

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*Photo: Installation as part of Recology's artist-in-residence program
Source: <http://thriftstorejunkies.com/2011/01/from-trash-literally-to-treasures/>*

ABSTRACT

In 2012, the City of San Francisco reached an 80% municipal solid waste diversion rate. San Francisco's achievement is remarkable; it has been far more successful at waste diversion than any other US city. In this paper, I ask how San Francisco has been able to achieve 80% diversion, and specifically how the city and the service provider, Recology, have engaged resident participation in waste management operations.

Drawn from interviews and extensive document review, I find that San Francisco benefits from some characteristics intrinsic to the city context, including a culture of environmental awareness, particular historical legacies, and a unique economic geography, that support the city's zero waste mission. In addition to these "intrinsic" characteristics, however, I find that the city uses a number of tools that may be more broadly applicable in other urban areas. These include a service provider whose mission and skill set aligns well with city goals; a series of incentives that include both carrots and sticks; and broad and well crafted outreach, information, and customer support. These findings indicate that while context matters, there is hope for other cities and other systems. The example of San Francisco illustrates that taking a broad-based, multi-dimensional approach, with local history and culture in mind, could lead to progress in other places and other infrastructural arenas.

Introduction: The Remarkable 80%

In 2012, the City of San Francisco reached an 80% municipal solid waste diversion rate. This means that of the total material tossed by San Franciscans, only 20% ended up in a landfill. The remaining 80% was either recycled or composted. San Francisco's achievement is remarkable; it has been far more successful at waste diversion than any other US city. By means of comparison, Boston's recycling rate hovers around 17%; New York City's around 15% (Abel 2012; Zimmer 2012). Neither Boston nor New York has municipal compost collection programs. Portland, OR, which does have a compost program, is edging towards a 70% diversion rate, coming closer to San Francisco (Bureau of Planning and Sustainability 2012). The national average, however, hovers around 34%, putting San Francisco very far ahead of this particular curve (US EPA 2010). How has San Francisco done this?

In this paper, I attempt to unearth the answer to this question. I ask how San Francisco has been able to achieve 80% diversion, and specifically how the city and the service provider have engaged resident participation in waste management operations. While looking at the city's waste management system overall, I pay particular attention to how management practices and policy impacts individuals and households. Through this analysis, I draw lessons applicable to other solid waste management systems, but also more broadly for other types of urban infrastructural services.

In the following pages, I will first present a broad overview of current solid waste management system in the city, and then present the reasons I believe it has been so successful. Drawn from interviews and extensive document review of city reports, city press releases and marketing material, published material from the city's solid waste contractor, media coverage, and academic research, I find that San Francisco benefits from some characteristics intrinsic to the city context, including a culture of environmental awareness, particular historical legacies, and a unique economic geography, that support the zero waste mission. In addition to these "intrinsic" characteristics, however, I find that the city uses a number of tools that may be more broadly applicable in other urban areas. These include a service provider whose mission and skill set aligns well with city goals; a series of incentives that include both carrots and sticks; and broad and well crafted outreach, information, and customer support. Finally, I look at what is on the horizon for tackling the last, pesky, 20% of waste that is still landfill-bound as the city steadfastly marches on towards "zero waste."¹ I conclude with a discussion of the lessons that these findings suggest for other cities and other types of infrastructural systems.

San Francisco's Solid Waste Management System: Overview

San Francisco has tri-stream collection, a system dubbed the "fantastic three" by the city.² For all commercial and residential uses, three different bins are provided: one for waste for the landfill, another for recyclable materials, and a third for compostable material. It has been recently estimated that about 90 US cities have curbside composting programs, while approximately 9,000 have some kind of curbside recycling programs (Daigneau 2012; Williams n.d.). Recology, a vertically-integrated, employee-owned, waste services company is the sole service provider for the

¹ "Zero Waste" is a term that has been developed by environmental and waste reduction advocates to describe product manufacturing and waste management cycle where no material is unnecessarily sent to a landfill or incinerator. Rather products are manufactured to be easily disassembled and reused or recycled and all waste generated in homes in businesses is reused, recycled, or composted (Zero Waste Alliance n.d.).

² For the purposes of this paper, I am looking only at municipal solid waste, the everyday garbage thrown away in household and commercial activities. This paper does not include construction and demolition waste, or industrial waste.

city, but the city does not itself contract with the Recology. Rather, each resident and business in the city contracts Recology individually; this arrangement is protected through a city ordinance that provides Recology with exclusive rights of garbage collection. This ordinance was originally passed in 1932, and though the company has grown and undergone substantial change since then, it has consistently remained the sole service provider in the city (Perry 1998).

The sole-provider arrangement has been challenged several times. The challenges have typically been organized by competing waste companies and free market advocates who feel that Recology's monopoly position is unfair and potentially exploits customers. These challenges have come in the form of ballot measures, the most recent of which was in the spring of 2012. The measure to eliminate the provision for exclusive rights for Recology was rejected by voters 77% to 23%, indicating overwhelming support for the current arrangement (Anonymous 2012; City and County of San Francisco Department of Elections 2012).

While the risk of corruption in this arrangement seems quite high, there are several ways in which both the company and the city work to prevent untoward outcomes. First, Recology is not free to set prices independently. Rather, under the 1932 ordinance, the city sets the rates. Of course, the city and company could collude to set unfairly high rates, but over time, Recology and the city have negotiated these rates, with the result that current rates are comparable or cheaper than similar programs elsewhere (Perry 1998; City and County of San Francisco Department of Public Works n.d.). Further, because the ordinance is subject to consistent scrutiny by residents, and the arrangement could be revoked at any point through ballot measure, both the city and Recology are ultimately accountable to residents through the political process. Finally, Recology's practices are kept open and transparent, perhaps as part of the legacy of being an employee-owned company, and serving a populace that is unusually informed and interested in where their waste goes. All Recology facilities are open to the public for tours, and are regularly inspected by city officials (Recology Employee 2012; Perry 1998; City and County of San Francisco Department of Elections 2012).

Reasons for San Francisco's Success: Context and Tools

San Francisco's waste management program is unique in some respects, but also relies on tools and programs that are widely used in many contexts. While people in Boston, for example, might dismiss the possibility of using San Francisco as a model since the context is so wildly different, this research actually indicates that much of San Francisco's success can be attributed to techniques that could be (and have been) implemented elsewhere. There are, however, certain aspects of San Francisco's solid waste management system that are embedded in the city's unique context. The following paragraphs first review the city's unique features that support its diversion rate success, including the region's economic geography, historical legacies of the city and the system, and the city's pervasive culture of environmental awareness. Then, I review tools used by the city and Recology that could be more widely applicable, including regulations, the right service provider, incentives, and substantial programs for outreach, information, and customer support. For each example, I pay particular attention to the impacts on, or inclusion of, residents.

Context: Economic Geography

The economic geography of the Bay Area plays an important role in San Francisco's waste management success, particularly in terms of Recology's composting program. Napa is a natural market for the end product of Recology's compost stream. Nearly all of the compost they produce is sold to Napa wine growers and farmers. As stated in a recent article in the trade

magazine *BioCycle*, "...the successful model at the front of the house is supported by the best infrastructure in the country. 'You have to have it at both ends,' [a Recology employee] says. '...The ultimate story is that our farmers can access and apply the compost on their fields. We've created a loop'" (Sullivan 2011).

In addition to the natural market for the compost, both composting and recycling are considerably more labor intensive than landfilling. While this can lead to higher costs, these costs are offset by the income from material sales, and also results in substantial local job creation. A recent report by the Tellus Institute estimated that a nationwide diversion rate of 75% would result in 2.7 times more jobs than currently exist in the waste management industry (Goldstein 2011). While the desire for local employment is not unique to San Francisco, the fact that Recology is a local, employee-owned company is very unusual and dovetails well with local values (Recology Employee 2012).

Finally, under the broad heading of economic geography, the economy of scale, along with the regulatory oversight mentioned above, means that service has remained affordable for residents. Though there are few cities with directly comparable programs with which to compare costs, the average rate of \$27 per month in San Francisco is similar to Portland, OR, which uses a more typical a competitive franchise model,³ and has rate equivalent to about \$24 - \$43 per month, depending on bin sizes. In San Francisco, the monthly fee entitles residents to weekly curbside collection. As will be discussed below, the costs are also variable; less garbage can mean lower fees and vice versa.

Context: Historical Legacies

As evidenced by the 1932 ordinance, Recology, and its predecessors have been operating in the city for generations. But actually, the firm's history in San Francisco is even longer that; previously loosely organized, small-scale collection coops, the company was officially formed in 1920, under the name Sunset Scavengers. In 1921, the city government, in its first ever intervention into solid waste collection, established the maximum rates that Sunset, or the other companies operating in the city at the time, could charge residents. By the time the 1932 ordinance was passed, Sunset had consolidated with the other, smaller, cooperatives, and was providing service to the whole city. Despite transition from Sunset Scavenger to Recology, institutionally the company has a long history, and deep roots, in San Francisco.

As observed by ethnographer Stewart Perry, many employees of the company were the sons of employees; garbage men were proud of their industry and their work. The nature of the work "brings the scavenger in touch with the many human problems of a neighborhood. And the continuity of his route means that he keeps in touch on an on-going basis, following continuing stories episode by episode" (Perry 1998:76). In other words, the collectors know their route intimately, and residents frequently know their garbage collector. This long term, ongoing relationship is unique, and leads to all kinds of accommodations that would be unheard of in other systems. For instance, collectors know the houses of people who have trouble moving the cart in and out, and for those people, collectors will actually put carts away in garages or alleys once they

³ A competitive franchise means that the city identifies districts in the city and, on a pre-set cycle, competitively bids collection service district by district. Under this system, it is possible that one contractor could serve the whole city, but it also can create room for smaller service providers.

have been emptied. The commitment of residents to the Recology arrangement has been attributed, at least in part, to these long-term relationships (Perry 1998; Recology Employee 2012).

It is not just the longevity of Recology that has created the unique historical legacy of San Francisco, however. Both San Francisco, and the State of California have, over time, taken actions which set the stage for the city's current success. State law, in particular, has played an important role. In response to fears about a shortage of landfill capacity, California passed a law in 1989 requiring municipalities to divert at least 50 percent of waste from landfills by 2000, or be subject to \$10,000 a day in fines. Jack Macy, the city's coordinator of commercial zero waste argued that the state law "gave teeth" to local waste reduction goals (as quoted in Sullivan 2011). Macy noted further that "the state went from 10 percent diversion in 1990 to 58 percent by 2008 while the city went from about 25 percent to 77 percent over the same time period" (Sullivan 2011).

While the state established a legal framework for dramatic reduction in landfilled and incinerated waste, the city continued to experiment with further reduction strategies. Household composting was only mandated in the city in 2009, but collection of compost from commercial establishments (like restaurants, or office building cafeterias) was piloted in 1996. A residential compost collection program was then piloted in 1997. After experimenting with various collection and storage techniques, the city and Recology partnered to roll out a city-wide, voluntary curbside compost collection in 2000. Recology provided collection service and actually composted the material, and the city conducted outreach and education to residents (Sullivan 2011). Residents simply had to request compost bins—one for their kitchen, and a larger curbside "green" bin; the bins would be delivered to their door, and collection would commence at no extra cost to the resident (CalRecycle 2002). Thus, by the time the city mandated composting, many residents had been composting for years already.

Context: Culture

It is important to acknowledge that both state and city action, and even the evolution of Recology, is embedded in local culture and local values. According to theorists of infrastructure and culture, infrastructural services are both a product of cultural values, and also help to shape values and expectations over time (Star 1999; Geels 2005). California has been an environmental leader in the United States, frequently passing state environmental standards that exceed federal standards, for instance in terms of automobile emissions or air quality. Within California, San Francisco's reputation is progressive and highly environmentally aware. As the city's waste management practices have evolved, residents have come to accept, and even expect, cutting edge, highly environmentally sustainable waste management from the city. In this environment, cultural values mean that innovation is a natural part of the work for managers of the city's waste (Recology Employee 2012).

Tools: Regulations

Historic and cultural context is certainly a key part of the story in San Francisco, but the current outcomes are certainly not inevitable, even given the context. The city government and Recology have made discrete decisions and utilized a number of tools over time to reach the 80% diversion rate. Many of these tools can be, and in some cases have been, utilized elsewhere. One of the most important tools that the city has used is regulation. While some regulation addresses the service provider, like the ordinance giving Recology exclusive rights to the city's waste, regulations also govern individual and household behavior. For instance, composting was made mandatory for everyone (individuals and businesses) in 2009. Even though it had been available for nearly a

decade, city employees credit the 2009 law as “our strongest tool to date to increase source separation with the biggest benefit in increasing composting participation and diversion” (a city official as quoted in Sullivan 2011).

The regulations themselves are an important signal, but they also come with “sticks.” Once the city mandated composting, it then had power to levy fines. According to a recent article, the composting “law is backed up by the enforcement of three agencies: public works, which writes fines for contamination (they've been issuing tickets); public health, which has the authority to put liens on properties for nonpayment of service accounts (power yet to be tested); and [the San Francisco Department of Environment (SFDE)], which has the ‘good cop’ job of outreach and education. ‘We had the carrot approach, and then we added the stick,’ says [one city official]. ‘That stick is very effective’” (Sullivan 2011). Importantly, the city has not yet been issuing fines. Warning tickets are issues to households that are not properly separating the three material streams, but as of yet, the city has not imposed monetary fines on households and businesses that are not in compliance with the law. Rather, the ability to do so seems to have had an impact on behavior.

Tools: Service Provider

As referenced previously, the city’s service provider, Recology, is a key part of the city’s success. While Recology itself may be a local San Francisco company that is not available in all markets or regions, there are key characteristics that have made the firm a good partner for the city in moving towards zero waste. First, and very importantly, Recology shares the city’s zero-waste vision (Recology n.d.). The company’s profit model is organized around materials reuse rather than tipping fees or collection fees the way more traditional waste companies are. This means that Recology is willing to creatively work with the city to constantly increase diversion rates. The company and the city have also forged a very close working relationship; the company’s sustainability team meets weekly with the city’s department of environment to track operations and progress (Recology Employee 2012).

In addition to sharing a vision for zero waste, the company is able to work in many dimensions to help reach the zero waste goal. Recology offers a full suite of services and is vertically integrated. They collect material, process it for recycling, and actually do the composting themselves. This gives them a high degree of control over costs and quality. In addition to vertical integration, the company has positioned itself as “customer-oriented.” As mentioned above, this means that route drivers frequently know the customers well, and provide an unusual level of service. As described by a Recology employee interviewed for this project,

“without people, we wouldn’t be in this arrangement. We try to work with customers to make things work in each house. Like, people make arrangements to share bins between houses, or get smaller bins. We also get lots of feedback about drivers: ‘the drivers know my kids,’ or ‘they always put bins back where we want them.’ Many drivers have been in the same neighborhoods for many, many years. They know the people along the routes, know where the old ladies live, and how to make it easier on them. The people who have been here for a long time, it is often a family business, and they are quite proud of their work” (Recology Employee 2012).

This willingness to problem-solve on a house-by-house basis is highly important, and has been a key mechanism for gaining participation at the household level.

Tools: Incentives

In addition to having the right service-provider partner in Recology, San Francisco's solid waste management system has developed a series of incentives that directly encourage full individual participation towards the goal of zero waste. First, the city uses a "pay-as-you-throw" (PAY-T) program, pegged to the amount of landfill-bound waste generated by each household. The average monthly cost is \$27 per month; but if people are creating more landfill waste and need to request a larger landfill bin, then the cost of service spikes to \$50 per month. Conversely, smaller landfill bins can be requested, reducing the monthly charge to as low as \$15 per month. Residents can request larger compost or recycling bins for no additional service charge (City & County of San Francisco Department of Public Works 2010).

In addition to financial incentives, Recology has instituted a compost-sharing program, through which all city residents are entitled to 5 gallons of compost annually. This program has proven to be quite successful; in the last compost giveaway, the compost ran out long before demand was sated (Recology Employee 2012). The success of the compost give-away is due in part to the cultural context of the city. This context also creates another tool that the city and Recology have been able to use to their advantage. The highly successful waste diversion program has become a part of the image, even the identity of the city. The Mayor vocally supports the compost and recycling programs, and frequently speaks publicly about the program's success (see for example: Mayor's Office of Communications 2012). In addition, San Francisco's diversion milestones are widely reported in the national press (see for example: Sankin 2012). The city has skillfully capitalized on this image through savvy media representation to perpetuate a culture of participation among residents.

Tools: Outreach, Information, Support

The city has not only been successful in garnering media attention and promoting an image of being on the environmental cutting edge, it has also invested in a series of tools for outreach, information provision, and resident support that go beyond the house-by-house problem solving that Recology undertakes. The Department of Environment's website is easy to navigate and oriented around problem solving. For instance, there are anonymous forms for tenants to report landlords that are not providing the appropriate bins or otherwise making it difficult to recycle or compost (City of San Francisco n.d.). Information about what is recyclable and compostable is available in many languages. The city uses radio, television, web-based video, and paper pamphlets to inform residents about how and why to recycle and compost. This material is highly designed and oriented around messages of innovation and fun, rather than legal compliance or civic obligation. One YouTube video about recycling, ends with the line: "we do great things with stuff you don't even want" (SF Environment n.d.).

In addition to the educational material produced by the city, Recology sponsors artist-in-residence programs where artists are invited to pull material from Recology's materials recovery facility and create artworks and installation. The exhibits receive substantial media attention, and have been successful ways of getting people to visit Recology's facilities, thus interfacing with their waste streams in a new way.

Snags + Solutions towards Zero Waste

On the way toward to the current 80% diversion rate, and looking ahead towards a 100% diversion rate, a goal the city plans to reach by 2020, the city faces many obstacles. Some of these relate to individual behavior, and others to larger problems caused by materials and manufacturing practices.

The city and Recology have worked together to tackle problems with individual participation and the city has adopted a broad-based approach to materials challenges.

At the individual level, the problems tend to be households either do not recycle or compost, or do not adequately separate materials. In the case that there is no recycling or composting, it is often because a landlord has not provided proper bins. A Recology employee indicated that very often this is due to lack of information rather than willful non-compliance with the composting and recycling law. In these cases, Recology first, and then the city, will reach out to landlords individually to inform them of their obligations to provide tenants with the proper bins. The bins are provided free of charge, so this is often a matter of reaching difficult to reach individuals, or tracking down absentee landlords (Recology Employee 2012).

In terms of improper or inadequate sorting, this is something that Recology drivers can often see while they are collecting because neither the recycling nor the compost is bagged. They can leave tickets, or inform the city. As mentioned above, the city has not yet exercised its right to fine people who don't compost adequately, but could begin to do so for households that repeatedly separate materials inadequately. For the time being, the city relies on the comprehensive program of outreach, education, and house by house problem-solving to support the development of habits and practices at the household level (Recology Employee 2012; Sullivan 2011). While seemingly weak, these practices have already proven to be tremendously successful, as most residents and businesses compost and recycle already (Eberlein 2012).

Perhaps an even more difficult problem is that of common materials that are currently not recyclable. These may be products like ubiquitous plastic bags which are difficult to recycle in part because they are so light that they float around sorting facilities and clog equipment meaning that they cannot be collected along with the rest of the single stream of recyclable materials (Kroll 2011). Or, they may be products that are so difficult to disassemble that even if the component parts are recyclable, the costs far outweigh the potential value of the embedded material. To address these issues, the city is pursuing many strategies. In terms of working with individuals and households, the city's Department of Environment promotes what it calls "consumer responsibility." Through web-based media and information, the department asks: "what will you do help keep San Francisco the greenest city in North America?" It asks residents to act as responsible consumers and think about how purchasing choices impact waste. Specifically it offers resources to help people figure out how to buy the right amount food, so as not to waste; to buy local products, and to avoid products with excessive or unrecyclable packaging (SF Environment n.d.).

In addition to educating residents about purchasing practices, the city is also considering bans on certain problematic materials. For example, following in the footsteps of other cities around the globe that have banned plastic bags, San Francisco recently banned retailers from giving customers plastic bags, and mandated a small fee for paper or compostable plastic bags in an effort to reduce the number of bags that end up as litter in the city, in the bay, or elsewhere (SF Environment n.d.). In addition to outright material bans, the city also promotes producer responsibility. It does this through its own purchasing programs, and also by encouraging manufacturers to produce goods that are easily reused or recycled. While the city has limited influence over large manufacturers, the city government uses the bully pulpit to advocate for reform.

Lessons for other cities and other urban infrastructural systems

Despite San Francisco's success, the city still has a long way to go, and perhaps the last 20% will prove the most difficult, as the city has to tackle increasingly difficult materials and the most resistant residents. However, the current achievement is notable, and provides a number of important lessons for other cities attempting to similarly increase diversion rates. Many of the lessons from San Francisco are also applicable to other urban infrastructural services that require participation from residents at the household level such as rain barrel programs.

Cultivate a culture

San Francisco's 80% diversion rate is a product of an environmentally aware and politically progressive city. However city policy and techniques have shrewdly tapped into the dominant culture of the city, both to build support, and ultimately to change behavior and create new norms and expectations. In cities with less of a reputation for environmentalism, policy makers can still take a page from San Francisco by tapping into local values and culture and then shaping both policy and marketing around policy initiatives to resonate with residents.

Engage creativity on multiple fronts

Both San Francisco and Recology have exhibited creativity in their willingness to "think outside the landfill" as well as to literally *create* scenarios which allow programs to thrive. In terms of the former, Recology has exhibited creativity around materials. The artist in residence program is a literal creative endeavor that transforms material waste into art, and generates interest in and awareness of waste streams. Material creativity has also been a factor in finding new uses or remanufacturing opportunities for formerly value-less waste material.

But material creativity can only take the program so far. The city and Recology have also worked to create new markets, like the market for compost, or finding ways to supply local industry with necessary feedstock in order to make the program financially solvent. In doing so the city is playing an active role in creating the conditions underlying conditions that make program successful, while also refining the daily operations. These creative approaches are important take-aways for similar programs in other cities that will likely find new challenges around every corner; new solutions will have to be devised that likely haven't been tested before.

Multi-faceted Approach:

In addition to a broadly creative approach, the city and Recology attack the problem of waste generation and management from many angles in the pursuit of zero waste. They have not relied on any single silver bullet, but rather work from multiple angles at once. In the case of San Francisco, this means experimenting with various collection and sorting mechanisms to maximize diversion through Recology's operations while also engaging individuals as consumers (though consumer responsibility), as waste generators (through tailoring collection and operation to the needs of residents), and, critically, *as part of the solution*; and simultaneously engaging product manufacturers. All this in addition to using a variety of regulatory tools from composting and recycling mandates, to material bans, to PAY-T, to fines. For other zero waste programs in other cities and for other infrastructural services, this comprehensiveness is key. San Francisco has shown that over time behavior change is difficult, but possible when supported through a comprehensive strategy rather than a single intervention.⁴

⁴ Counter examples of this would be something like Boston, where in an effort to increase recycling rates, the city purchased new, larger recycling bins. This single change did result in a small increase in the city's recycling rate, but

Strong Partnerships:

Finally, the San Francisco example illustrates the importance of strong partners that share a vision. In the case of San Francisco, this partnership includes Recology, the city government, and city residents. In other cities, or in the case of other infrastructures, the partnership may be between city departments, or with utilities, or other organizations. Strong communication and a shared vision among all entities involved service provision seems, in San Francisco, to have been a key part of their success.

Conclusion: Adapting San Francisco's Lesson for Other Contexts

Perhaps the most valuable lesson to be learned from the San Francisco case is that change is possible, and it need not take forever. Over the course of 30 years, the city has gone from having virtually no alternative waste management techniques to diverting 80% of material that is discarded by residents towards productive use. While there are some contextual features of San Francisco that differentiate it from other cities, many of the tools and strategies they have utilized would be readily applicable in other places, and even in service of other infrastructures. For instance, a water department might be able to adapt many of the lessons discussed above, particularly in terms of engaging the participation and cooperation of residents in a program like individual rain barrels for storm water catchment.

Taking a similar approach to San Francisco would mean pairing a broad-based education and outreach campaign, with free equipment, and readily available problem-solving assistance. San Francisco's case indicates that behavior change is possible, and perhaps even that targeting specific behavior changes can be an important part of program success. In the rain barrel example, for instance, households might be rewarded for reducing water use through water rate reductions. Even though water is cheap, reducing the water base-line water rate for household that use less water would increase the value of saving water. Similarly, instituting costs for households that discharge above a certain threshold of waste water into the sewer system could also help. Further, well-publicized examples of successful households, or art installations in city water facilities can help draw attention and start to build a city ethic or value about water consumption and waste behaviors.

San Francisco it is wise to make the most of the unique historical and cultural legacies in each place, but that it is also critical to set ambitious goals, and then to be willing to experiment in many arenas in order to achieve them.

because it was not accompanied by another programmatic changes, the results have been decidedly lackluster. It cannot be said to have resulted in a shift in norms or expectations or behavior. The larger bins simple allow people to easily recycle things, like un-broken-down cardboard boxes that likely would have been previously thrown away.

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