

Codman Square Business District

Responding to Community Demand: Cleaning Up The Neighborhood



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Prototype Recommendations
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Research Conducted in partnership with Codman Square Neighborhood
Development Corporation

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Section I: How Trash Affects Communities

One of the most pervasive issues that urban communities face is litter. Litter has negative effects on the health, economy, and safety of both local communities and the broader environment, and often “stacks” — as people often litter without care, because trash is already present on streets and sidewalks. The neighborhood of Codman Square currently suffers from this litter issue. In the theme of the City of Boston’s new aims of resiliency, affordability, and equity, a new Codman Square business district support group can reduce and disincentivize litter within Codman Square to improve local quality of life for both residents and businesses.

A. Effects of Littering on Health

Littering has negative mental and physical health effects on community residents. On a physical level, improperly discarded trash provides breeding grounds for disease-carrying animals like mice, rodents and flies. These animals mobilize the germs from trash into the community and play a major role in the spread of pathogens and viruses.

The presence of trash on the ground sends the message that a community is not cared for or cared about. Removing litter can remove this stigma; a study from the University of Pennsylvania found that “residents of areas that had either the greening or trash removal projects reported a decrease in feelings of depression by about 40 percent. In neighborhoods below the poverty line, the drop was 70 percent.”¹ The visual appeal of communities is directly correlated with residents' mental health—this alone should be enough of a reason to clean up communities.

B. Effects of Littering on the Local Economy

Littering is an expensive problem; businesses across the U.S. pay about \$9.1 billion to clean up litter. It also lowers home values; 93% of homeowners would be less likely to purchase property in a littered neighborhood, and 60% of property appraisers would assign properties a lower value if litter was present.² Additionally, a study by the National Association of Home Builders says property values decrease by slightly more than 7% if litter is present.³ These statistics all support the idea that potential residents are less likely to relocate to areas where litter is prevalent. This in turn means businesses can lose potential revenue due to a lack of customers. Litter on the streets presents only negative impacts for local economies.

¹ “Cleaner Public Spaces Can Lessen Depression and Hopelessness, Study Finds.”

² “KBB-Littering-Facts.Pdf.”

³ “KBB-Littering-Facts.Pdf.”

C. Connecting Littering and Crime

The presence of community litter correlates with higher crime rates and rates of perceived crime. According to a study by Branas et al, when residents live in cleaner areas, there is a “58% reduction in people’s fear of going outside due to safety concerns and a 76% increase in their use of outside spaces.”⁴ Residents simply feel safer when they live in clean areas. Likewise, researchers at Ohio State said “We can see that on streets where litter, graffiti and fly-posting exist, there is also a higher risk of crime when compared with places where they are not present.”⁵ Reducing litter, thus, can reduce the perceived risk of neighborhood crime.

D. Effects of Litter on the Greater Environment

Litter has a massive effect on pollution of the global environment. Researchers believe that 40% of litter is burned with toxic emissions; additionally, litter accounts for 60% of water pollution.⁶ With climate resilience in mind, Codman Square can do its part in curbing the greater environmental issues the world faces—including through litter cleanup.

Section II: How Trash Affects Codman Square

Litter on the streets of Codman Square business district hinders the walkability and authenticity of Codman Square. Residents and businesses would benefit immensely from better trash disposal infrastructure to create a more hygienic neighborhood. After seeing firsthand the impact of the trash on the streets, and the lack of proper trash disposal mechanisms, the city of Boston needs to provide more suitable infrastructure to support the people of Codman Square. Additionally, ensuring that there is regular street cleaning to sweep up debris caught in the wind would create a more attractive curb appeal for the neighborhood, boosting business. Assessing the city’s responsiveness to various 311 calls within the past year reinforces the idea that residents want and need better resources in this area that the city needs to provide.

A. Boston 311 Reports

The Boston 311 allows Boston residents to file complaints with the city through constituent calls or the Citizens Connect App. This data was compiled on all street cleaning requests for the street addresses of 443-697 Washington Street, Dorchester, MA, 02124. In 2022,

⁴ Branas et al., “Citywide Cluster Randomized Trial to Restore Blighted Vacant Land and Its Effects on Violence, Crime, and Fear.”

⁵ Bennett, “Perceived Health Effects of Litter and Trash by Inner City Residents.”

⁶ “Showdocument.Pdf.”

there were 115 requests sent into the city, and 10 requests for 2023 so far. Many of these requests were resolved within the day with resolutions ranging from debris cleanup, manual sweeping, and obtrusive object removal. Overall, the Boston 311 allows residents to have their concerns swiftly resolved; expanding awareness of this service can allow residents to make a difference in their community.

B. Street Observations

When walking through the Codman Business district, the team observed various types of trash on both sides of the road. The litter consisted of take-out containers, wrappers, receipts, bottles, bags, boxes, and more. Many of the items were items that should be recycle. Trash got caught in vacant doorways, fences around properties, and outside the trash cans along with being sprawled over the sidewalk.



C. Trashcan Observations

There were 26 total trash bins scattered throughout the district. The trash cans are inconsistent and sporadically placed; [our team's fully outlined trash can map is accessible here as a .PNG](#). In some areas, there are multiple blocks without trash cans, and other corners are filled with trash cans lining the streets. The trash cans themselves were in bad shape, causing trash to get caught on the outside, and never securely inside the bin. The bins were unlocked, did not always have trash bags, and were broken or bent. The bins themselves do not motivate

residents to throw away trash given the harsh conditions they are in, and they can not keep the trash from being thrown away inside.

D. Summary

The Codman Square business district would benefit immensely from a community project that addresses litter on the street. Businesses in the district are suffering as a result of litter-filled sidewalks and unattractive curb appeal. This report so far has highlighted how trash impacts communities, and shown that litter is a particular issue in the Codman Square neighborhood. The rest of this report includes effective methods for combatting this issue using



infrastructure and community participation.

Section III: Physical Infrastructure Solutions

After the team visited the Codman Square Business District and confirmed the presence of excessive litter on the ground, we began to identify causes and solutions. We immediately identified that Codman Square has outdated and broken trash cans. Within the main business district alone, there are stretches of 2 blocks without a trash can, followed by 4 trash cans on one sidewalk. This lack of intermittently-placed, high-quality trash cans promotes littering rather than proper disposal. Most trash cans did *not* have a lid covering the top, which could cause wind to blow trash out of already-filled containers, and cause visible litter to amass on the ground. The lack of coverage also allows animals to gain access to and strew trash all over the street.⁷ With this in mind, we recommend several physical improvements to Codman Square's infrastructure that a business district support organization can quickly implement to reduce community litter.

⁷ 'Bigbelly.com'

A. Bigbelly Bins

After researching different types of trash cans and meeting with small business specialist Nick Schonberger, the team came to the conclusion that Bigbelly trash cans would be the most effective trash receptacles for reducing litter in Codman Square. Bigbelly is the world leader in smart waste and recycling; the company has over 70,000 units in all 50 states and in over 60 countries.⁸ All of their current units are solar-powered and “smart”, meaning they have the ability to inform the collection company when the trash can is full. All Bigbelly bins are on the same cloud and can be optimized for pickup in real time depending on the data received from the bins.⁹ All of their units are fully enclosed to avoid any unwanted trash from escaping the bin.

Bigbelly currently offers two different models of trash cans: high capacity and standard capacity (seen here in green). The high capacity HC5 unit has a 150 gallon capability with a built-in trash compactor. The HC5 can have an enclosed hopper or open faceplate for trash disposal,¹⁰ and can be modified to accommodate mixed waste trash, single stream recycling, or compost. Due to the larger capacity and compactor feature, the HC5 would cost the city ~\$4,000 per unit.¹¹

The standard capacity SC5.5 model, which the team believes to be the best option for Codman Square Business District, can hold 50 gallons of trash. The SC5.5 has the same dimensions as the high capacity model, but is much lighter. This unit can also be customized to hold mixed waste trash, single stream recycling, or compost. The difference from the HC5 model is that the SC5.5 can also do individual recycling such as paper/cardboard, or bottles and cans. This trash can comes with all the same accessories as available on the high capacity model, as well as the same options for an enclosed hopper or an open faceplate. The team recommends the SC5.5 due to its reasonable price per unit (~\$3,000) and solid capacity (50 gallons).¹² Another option that Bigbelly provides



⁸ 'Bigbelly.com'

⁹ 'Bigbelly.com'

¹⁰ 'Bigbelly.com'

¹¹ 'Bigbelly.com'

¹² 'Bigbelly.com'

is the Bigbelly Kiosk (seen in blue), which is a combination of two Bigbelly trash cans. The combination can be two standard capacity units, two high capacity units, or one stand capacity unit and one high capacity unit. This would allow for a trash can and recycling bin to be placed directly next to each other, reducing total occupied space. Bigbelly Kiosks can also be wrapped in a custom graphic to promote custom city slogans or general cleansing efforts.¹³ The team recommends that Bigbelly Bins be used for such efforts.

B. Rationale Behind Bigbelly Bins



Bigbelly bins have a significant impact on litter in cities and towns. Their usefulness has been proven in Massachusetts when they partnered with the City of Newton to combat the excessive trash and collection problem; the City was having to collect the public trash cans 6 times a week to keep up with the amount of trash, resulting in nearly 120,000 collections per year. The City got in contact with Bigbelly to work on a smarter solution for their trash issue.¹⁴ Newton wanted to reduce the amount of trash on the streets, but also be more

environmentally conscious. After the consultation, 340 Bigbelly bins were deployed in over 170 locations. Since the implementation, public waste collections have been reduced by 88% (24 times per month to 2.7 times).¹⁵ The notification from the bins themselves help schedule pickup only when they are full, reducing traffic because trucks do not have to frequently pass through to empty the bins. The closed design prevented trash from escaping, decreasing the amount of litter on the streets. The City of Newton has saved over 102,000 collections annually and 194,535 tons of recyclable material was diverted from landfills in a year.¹⁶ The team expects that a similar impact would occur in the Codman Square Business District if Bigbelly bins are implemented.

C. Lavex Commercial Cigarette Receptacles

During the visit to Codman Square, the team noticed a significant presence of cigarette butts littering the ground. They lined the sidewalks and covered the bottom of trees. Cigarette

¹³ 'Bigbelly.com'

¹⁴ 'Bigbelly.com'

¹⁵ 'Bigbelly.com'

¹⁶ "Bigbelly.com"

butts are the number one form of litter in the world, and can have toxic effects if they find their way into water systems. Unfortunately, they cannot be disposed of in traditional trash cans due to potential fire hazards. To minimize fire risks, specific cigarette receptacles are often used to dispose of these products. Codman Square Business District has a severe lack of cigarette receptacles, adding to the litter problem. The team proposes the implementation of Lavex commercial cigarette receptacles to combat this issue. These receptacles are an all-metal construction, which is crucial in high traffic areas to avoid melting plastic. The slim construction takes up minimal space and a push button system allows for easy cleaning. Lavex cigarette receptacles require no sand or water at the bottom to extinguish the cigarette butts, of which it can hold 1,000. This unit has a very small opening to prevent any trash from being disposed of improperly. The Lavex cigarette receptacle only costs \$45 per module. The team proposes that a business district support organization—perhaps including the feedback of the Codman Square Neighborhood Development Corporation, Court Market, McDonald’s, Caribe Restaurant, and Next Step Soul Food Café—to place cigarette receptacles outside their storefronts.

D. Reasoning Behind Lavex Cigarette Receptacles

Cigarette pollution is a common problem all across the world. Oceanside, California, the northernmost city in San Diego County, is one city that looked to fight back against cigarette butts lining their streets. Oceanside has a population of approximately 170,000 and hosts many tourists throughout the year; the population size and influx of visitors led to thousands of cigarette butts found on parking lots, beaches, and sidewalks.¹⁷ The litter was entering the waterways and causing severe health issues for swimmers, bathers, and wildlife. After noticing the incredible amount of cigarette butts near a harbor, a resident suggested implementing a cigarette receptacle in that location. After two days, the unit was full of cigarette waste. Oceanside then moved to place more cigarette receptacles all over the city in areas where heavy traffic occurred. The installation of these units resulted in 454, 953 cigarette butts, or 170 pounds of toxic cigarette butts, being properly disposed of in the first four years.¹⁸ The Codman Square Business District would see a similar result if appropriate cigarette repositories are established.

E. Installations

¹⁷ “WasteAdvantageMag.com, Oceanside, CA and Cigarette Pollution Solutions Team Up to ‘Butt Out’ Cigarette Waste”

¹⁸ “WasteAdvantageMag.com, Oceanside, CA and Cigarette Pollution Solutions Team Up to “Butt Out” Cigarette Waste”

The Urban Action Lab team recommends that standard capacity SC5.5 Bigbelly bins and Lavex cigarette receptacles are installed at regular intervals along Washington Street in the Codman Square Business District. This immediate solution can help reduce visible litter that may hinder the arrival of new businesses.

Section IV: Implementation Strategies: Physical Improvements and Behavioral Campaign

A. Physical Infrastructure

While Bigbelly bins and Lavex receptacles would serve as an important base to reduce trash issues in Codman Square, longer-term management strategies are required to ensure the maintenance of these containers and the continuation of anti-littering efforts in the district.

Both a BID (Business Improvement District) assignment and a Main Street organization would provide serious institutional support for Codman Square in its anti-littering efforts. According to the [State of Massachusetts](#), BIDs are “special assessment districts in which property owners vote to initiate, manage and finance supplemental services or enhancements above and beyond the baseline of services already provided by their local city or town governments.” For example, if Codman Square’s business owners united to improve trash pickup services or increase the quantity of trash cans around the district, they could do so in the form of a BID. Another institutional support would be a Main Streets organization; the [Main Streets](#) districts are currently 20 “different communities where we strive to help local businesses succeed.” Many of the communities that Main Streets serves are demographically similar to Codman Square, and the nonprofits’ connections with city services would be very helpful to improve the state of the business district’s litter problems. Previously-existing Main Streets organizations may be able to expand their services to Codman Square, or an entirely new Main Street organization can be founded in Codman Square.

In addition to acquiring a BID or Main Street program, *Codman Square can establish an adopt-a-block program*, in similar vein to the adopt-a-highway campaign in Texas (see Section IV-B). Adopting a “block” in Codman Square—where residents and businesses can pay to provide cleanup services to a block in Codman square through a business district support organization—promotes anti-littering initiatives and positive community engagement. In this system, the individual or group who “adopts” the block would agree to pick up litter at least once

per month. Some examples of potential groups that could adopt could be local churches, schools or families. The leadership team of Codman's adopt-a-block program will provide safety vests, litter bags and safety training to litter pick up volunteers. The leadership team may also place a sign at the local lightpost of the individual's or group's name who adopted the block, encouraging further "adoptions" and increasing pride for a clean Codman Square.

In place of litter, Codman Square can also create an "Adopt A Pot" program in a similar vein to the business district in Millbury, MA. Millbury community members and businesses donate to "adopt a pot" for downtown streets, which pay for pots, fertilizers, and flowers. Participants or businesses are in charge of watering the flowers and general care of the pot and plants. Participants who adopt a pot also get a recognition plaque placed on their pot for their support. In Codman Square Business District, the beautification of the downtown streets initiative would be organized and overseen by a group of volunteers or a current community group. The leadership team would be in charge of organizing donations and placement of pots. The suggested placement of the flower pots would be in allocated spaces such as street corners or sponsored businesses. Specifically, the flower pots would be placed on the exterior street side of the sidewalk to avoid intervention with everyday walking traffic. The plants and pots are strategically designed to be low maintenance, durable and to withstand everyday walking traffic

of the business district. Here is a picture of what the adopt-a-pot program could look like for the business district of Codman Square: The flower pot is pictured using Google Images at the corner of Washington St. and Lyndhurst St. Here is another example of a city planter that can be used in Codman.

There are many benefits of establishing an Adopt a Pot program for a community. The first benefit is that the beautification of the streets incentivizes community members



and visitors to take care of streets and in turn promotes anti-littering initiatives. In addition, the beautification of the streets encourages more walking traffic in the business district and results in increased economic activity for the community businesses. The leadership team of the Codman Square Adopt a Pot Program can partner with local schools and church youth groups that help with the planting and care for the pots, leading to a sense of pride for the community and overall positive community engagement.

A variety of long-term institutional strategies can benefit Codman Square's littering problems. Whether a BID, a Main Street organization, or an "adopt-a-pot" program, each of these initiatives would help to clean up the historic business district.

Credit:
Google
Images

B. Examples of Successful Behavioral Campaigns

Installing solutions like Bigbelly bins and Lavex cigarette receptacles will require unique implementation strategies for the Codman Square community. We believe a business group-led campaign across Codman Square would assist the community's efforts to remove trash.

Community advocacy against littering works well when it is targeted and intelligently produced. One great example of this advocacy is the "Don't Mess with Texas" Campaign.

Created by the Texas Department of Transportation, Don't Mess With Texas (DMWT) is a campaign that aims to teach Texans the consequences of littering through various initiatives it created. DMWT has an abundance of initiatives, including; a cleanup VR Experience, scholarships and competitions in education, and Getting Involved programs. This makes trash pickup seem fun, respected, and supported.

Adopt a Highway is another scheme in Getting Involved that has volunteers 'adopting' a two-mile stretch of highway to keep clean for 2 years. At a more local level, there is Adopt a Street with the same idea, but a smaller area, which is possible as long as there is a community drive to keep Codman clean.

A similar study monitoring a behavioral-change campaign conducted in Lambeth, London to reduce littering suggested a plethora of methods and strategies for Lambeth Council to implement throughout their city. The five strategies they suggest, in chronological order are:

1. Future anti-littering advertisement campaigns,
2. Ashtray and litter bin design improvements,
3. Locations of litter bins,
4. Volunteer litter cleanup events, and

5. Student education about littering.

For Lambeth, their baseline observations showed that a little under half of all cigarettes smoked were disposed of improperly, but after implementing a pilot campaign, they observed a 39% reduction in cigarette litter, demonstrating the potential impact of a larger scale campaign on all litter. The pilot campaign was simple, consisting of sticking posters on trash receptacles, but the report was suggesting more nuanced strategies for future campaigns like community litter cleanup events and educational campaigns for students.

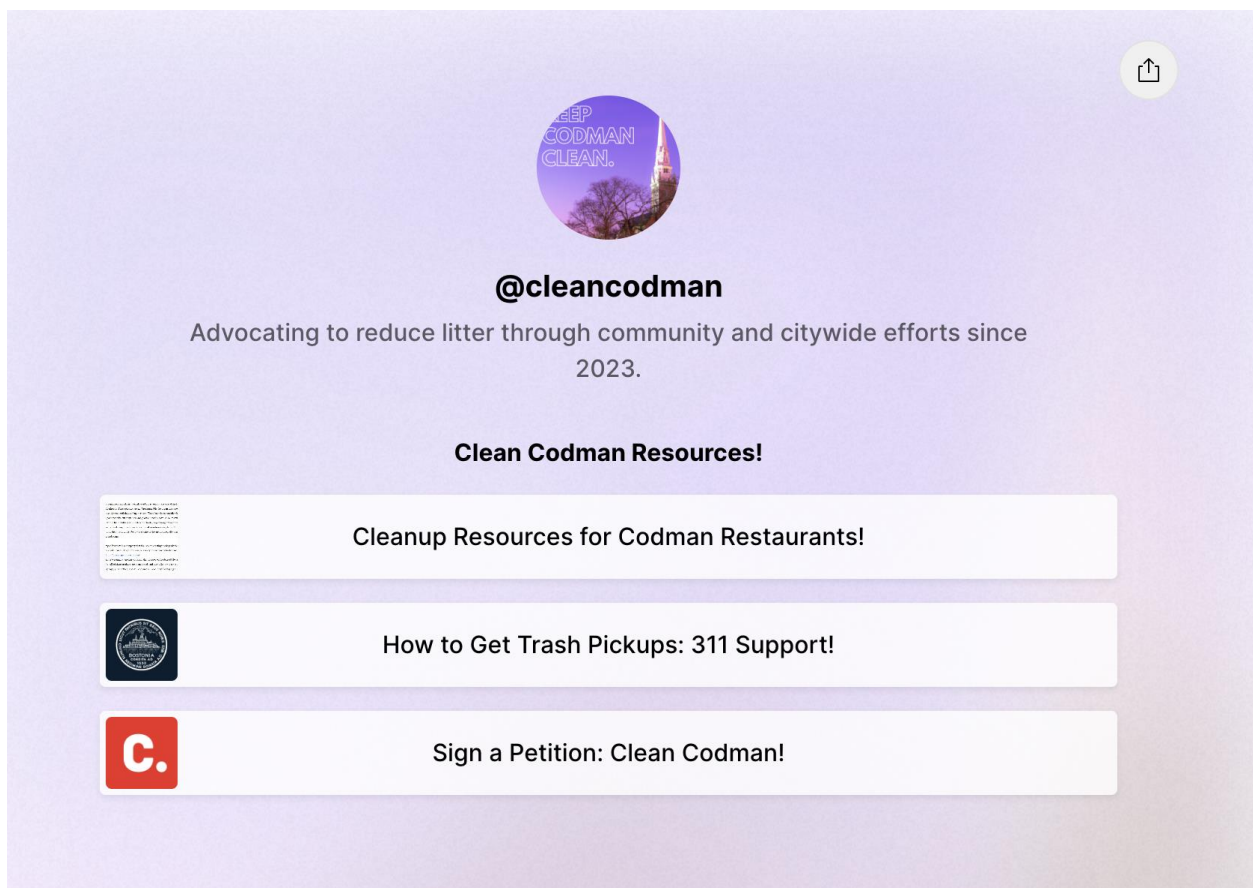
Codman Square could implement small scale campaigns to test the success of these efforts in their communities. As the Lambeth study showed, small scale campaigns can still have a major impact on reducing litter, and can be as simple as improving the infrastructure around the city and posters encouraging the community to dispose of litter properly.

C. Campaign Recommendations

When traversing Codman Square, the Urban Action Lab team encountered several sign posts that acted as “bulletin boards” for the community—each had unique QR codes for residents to use that gave them access to community group sign-ups; one such example was an anti-street violence campaign. A Codman Square business group can utilize these de facto bulletin boards to raise awareness about how to address Codman Square’s littering problems. Thankfully, online advocacy services can help the community in this regard: [Linktree](#) and [Change.org](#). LinkTree provides users with a “hub” website for links of their choosing that is often used for nonprofits, businesses, and advocacy groups. Change.org, meanwhile, provides a platform for online

petitions of various sizes. Here is a prototype of LinkTree and Change.org in action to support a Codman Square anti-littering campaign:

In this prototype figure ([accessible here](#)), residents who scan one of many printed QR codes along the Business District would be sent to the above screen. The first link, “Cleanup Resources for Codman Restaurants” provides a quick, but comprehensive document with cost-effective anti-littering choices that Codman Businesses can take to reduce the litter they produce. The second link, “How to Get Trash Pickups: 311 Resources!” would instruct residents on how to use the City of Boston’s 311 services to increase trash pickups and enforce anti-littering statutes. The third link, “Sign the Petition: Clean Codman!” would send a resident to a change.org petition that seeks to administer our team’s short term and long term solutions. Other



links—such as the contact information for local businesses and Codman Square’s city council members—would also be useful for this campaign.



Anti-Littering Campaign Poster Prototype (Credit Patrick McMahon, Thomas Roche, DALL.E).

If the community minimizes trash on the streets through new receptacles, a sustained anti-littering campaign, and structural changes like the addition of a Main Street organization, psychosocial evidence suggests that this change will stick for the long term. Littering in public spaces is *positively* associated with previous existence of litter on the ground;¹⁹ thus, if this present litter is removed through conscious action, then the likelihood of continued littering is significantly reduced.

Section V: Moving Forward—Recommendations for Rejuvenation

The Urban Action Lab team recommends that a business development support group in Codman Square implements several physical and behavioral strategies to reduce litter in the

¹⁹Schultz, P. W., Bator, R., Tabanico, J., *Bruni, C., Large, L. B. (2013). Littering in context: Personal and environmental predictors of littering behavior. *Environment and Behavior*, 45, 35 - 59. doi: 10.1177/0013916511412179.

community. Namely, this group should install SC5.5 Bigbelly bins and Lavex cigarette receptacles at uniform intervals along Washington Street to change the pervasive litter issue. To begin, a SC5.5 Bigbelly bin should be placed outside of On The Square property, owned by CSNDC, and Lavex cigarette receptacles situated outside of Court Market, McDonald's, Caribe Restaurant, and Next Step Soul Food Café. These high traffic areas will provide sufficient data to determine if the infrastructure has a significant impact. In order to sustain the new spotless environment, the Codman Square Neighborhood Development Corporation must employ a behavioral campaign to change residents' mindset. To accomplish a behavioral shift away from littering, a development group can create our suggested "adoption" programs, LinkTree promotionals, litter cleaning events, and Keep Codman Clean posters; these proposals would emulate successful anti-littering campaigns like Don't Mess With Texas—thus instilling a sense of pride within the community. The team believes that Codman Square has the ability to revitalize their business district with these physical and behavioral changes.