IMPROVING MUNICIPAL COMPOSTING IN PROVIDENCE

GOALS AND RATIONALE

Providence’s Central Landfill in Johnston, RI is nearing capacity and has a projected closure date of 2042 - just 24 years from now[[1]](#footnote-1). While individuals and businesses are legally required to recycle, there is little infrastructure for the enforcement of thoughtful diversion from the waste stream. In Providence, only 10% of items that go into recycling bins are actually recycled, and this number drops to less than 1% in neighborhoods primarily composed of poor and/or transient populations[[2]](#footnote-2), many living in multi-family homes where it is difficult to direct accountability to the right individuals. Interestingly, the alarmingly low rate of recycling appears to result from a lack of knowledge about what *can* be recycled, rather than an unwillingness to recycle[[3]](#footnote-3).

Food scraps — compostable material produced in home kitchens, commercial restaurants, and local farms — make up a full 20-30% of the waste that is dumped into the Central Landfill. Basic composting is easy to implement, has a low barrier to entry, and can be done at home for personal use or sent offsite to a private or commercial composting site. Given the lack of knowledge about basic recycling rules in Providence, it is likely that knowledge about the importance — and ease — of composting is likely non-existent.

While recycling is a decent solution to the problem of landfill management, composting is the gold standard for short and long-term waste stream diversion. Not only does it reduce the solid waste burden by 30% (ore more), which in turns cuts methane emissions by as much, it enriches the soil, helps prevent soil erosion, and — particularly important in a historically industrial city like Providence — binds to heavy metal contaminants in the soil (like lead) to create a healthier environment for producing local foods.

The current project seeks to measure composting rates across neighborhoods, define the best predictors of good (and bad) composting habits, and leverage this information to target specific strategies to each population.

TIMELINE

Week 1: Design quantitative survey and run pilot including 100 respondents.

Week 2: Create database of pilot responses and perform initial exploratory analyses.

Week 3: Build v1 predictive model of likelihood to compost.

Week 4-5: Re-assess and re-design survey as needed.

Create plan to minimize response bias from respondents.

Run power analysis and collect survey results as needed.

Week 6: Complete survey collection. Perform exploratory analyses on results.

Build v2 predictive model of likelihood to compost and related behaviors.

Group respondents by type according to results; recommend best practices for motivating food scrap collection to use for at home or offsite composting.

1. As described in *Sustainable Providence*, City of Providence Office of Sustainability, 2014.

   < <http://www.providenceri.gov/sustainability/about-the-plan/> > [↑](#footnote-ref-1)
2. City of Providence Department of Public Works, *Recycling rates per daily route*, Nov 2016-Jan 2017. < <https://lintvwpri.files.wordpress.com/2017/03/pvd-by-pickup-day.pdf> > [↑](#footnote-ref-2)
3. *Most Providence Neighborhoods Aren’t Recycling Properly*, Dan McGown, WPRI, March 2017

   < <http://wpri.com/2017/03/20/most-providence-neighborhoods-arent-recycling-properly/> > [↑](#footnote-ref-3)