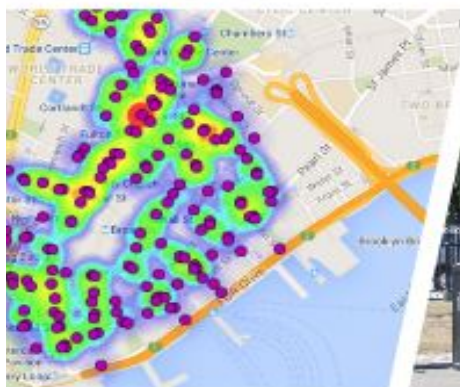




Needham, MA Client Assessment Report

Tom Egan



Intro & Overview

Bigbelly is consulting with The Town of Needham to evaluate the town's entire waste and recycling management operations. In early July, the Bigbelly team walked Needham to plot existing bin locations using a GIS Mapping Tool. Bigbelly met with Mike Shea and Greg Smith regarding Needham's waste and recycling operation on August 27, 2015. This collaborative meeting allowed the Bigbelly team to align with Needham to create a vision for a successful deployment.

Goals and Objectives

The aims of the Bigbelly assessment were to:

- Inventory the current waste and recycling footprint along with collection methodology.
- Document existing operations
- Examine for Operational Issues
- Communicate how Bigbelly will eliminate household waste in Needham's public receptacles.
- Increase public space recycling
- Collaborate with Needham to create a right-sized, *smart* solution

Common Operational Issues



Inventory Findings

The table below outlines our inventory findings

Needham Current Capacity		Location Type	Quantity
Existing Number of Bins	115	Waste	90
Footprint Total Capacity	4,176 gals	Recycling	7
Estimated Weekly Collections Per Waste Bin	3	Waste & Recycling	17
Estimated Fullness Upon Collection	25%	Existing Bigbelly BB2	1
Estimated Weekly Thru-Put	3,132 gals	Total	115

Our data collection led us to the following observations:

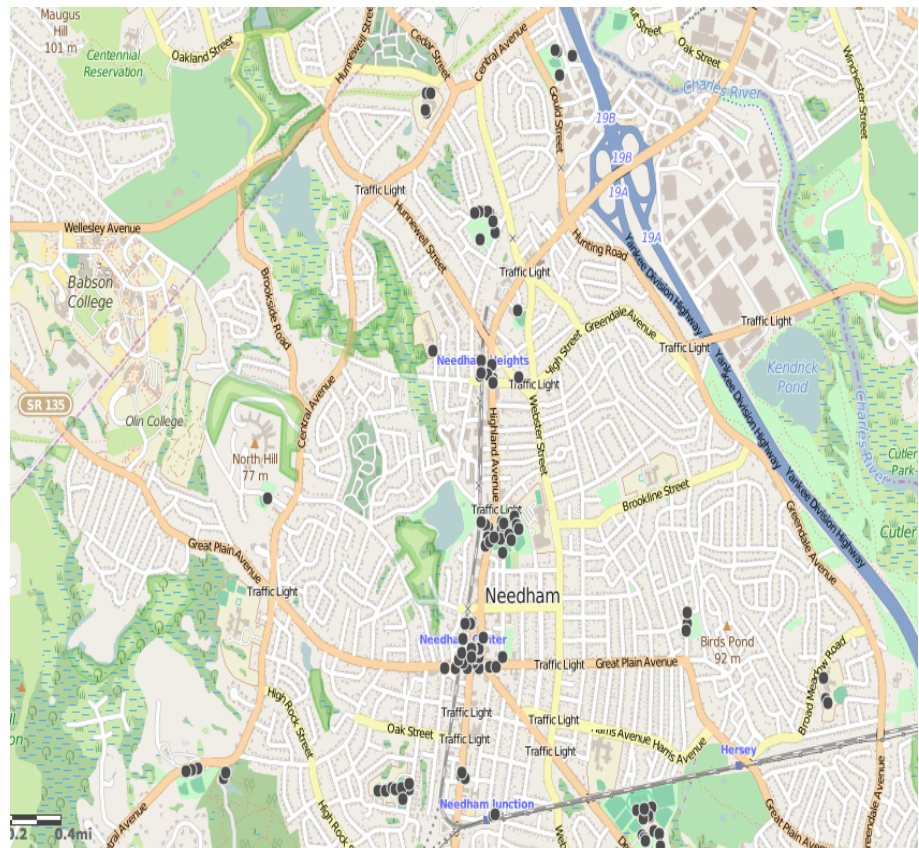
- **Recycling** - is only offered at between 10-15% of Needham's public waste collection locations
- **Waste Collection** – Needham is collecting from waste cans 3 times per week
- **Recycling Collection** – Needham is collecting from recycling locations 2 times per week

Existing Waste Footprint Map

This map displays Needham's current waste and recycling footprint with Bigbelly.

Key:

- 115 black symbols represent bin locations (public waste and recycling locations).



Our Recommendation

The table below outlines our right-sized solution for The Town of Needham.

Needham Bigbelly Capacity		Location Type	Quantity
Bigbelly Locations	47	Bigbelly Double Station	37
Footprint Total Capacity	12,800 gals	Smartbelly Double Station	10
Estimated Weekly Collections Per Bin	1	Total	47
Estimated Fullness Upon Collection	75%		
Estimated Weekly Thru-Put	9,600 gals		

Implementing Bigbelly will reduce the current footprint by 68% while increasing capacity from 3,132 to 9,600 gallons of waste.

Our recommendation would provide The Town of Needham with the following benefits:

- **Town-wide Recycling** – will increase Needham’s diversion by up to 40%
- **Collections** – will be reduced by 75%
- **Cleaner Public Space** – Trash overflows will be eliminated and wind blown litter will be reduced due to additional capacity and enclosed containers.
- **Secure Containers** – Enclosed designed eliminates pilfering, prevents the disposal of household waste in public bins, and stops animals from accessing containers.
- **Increased Sustainability** – Reduction in carbon footprint by cutting down the travel time by garbage trucks.
- **Reallocation of Resources** - Reduction in collections will open up more time for other projects.
- **Operational Transparency** –Software delivers results-based analytics from Bigbelly stations that provides real time data and can be shared with stakeholders and community.
- **Neighborhood Coordination**- Alignment with Newton’s city-wide deployment.

Productivity Gains

The table below outlines the operational savings Needham will experience with their deployment. The figures were developed through collection information provided by Mike Shea and Greg Smith.

Needham Operational Data	Current Operations	Bigbelly Operations	Savings/Gain
Collection Locations	115	47	68
Bin "Pulls" Per Week	345	47	298
Waste Capacity	5,920 gals	12,900 gals	6,680 gals
Collection Frequency	3x per week	1x or less per week	2x per week
Estimated Collection Hours Per Week ¹	35	5	30
Number of Crew Members	2	2	0
Estimated Vehicle Hours Per Week ²	12	5	7
Estimated Vehicle Hours Per Year	598	244	354
1. Assumes an industry average of 6 minutes per can per collection. 2. Assumes vehicle is running 1/4 of collection of hours			

Recommended Bigbelly Configuration Map

This map displays Needham's right-sized Bigbelly configuration.

Key:

- 37 orange symbols represent recommended Bigbelly Double Station – high capacity locations.
- 10 purple symbols represent recommended Smartbelly Double Station – lower capacity locations.

