Sustainable Innovations for the Public Space

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Overview

- We are here to talk to you about real-world examples of how cities are creating meaningful sustainability initiatives in the public space
- You will learn how you can create change in your city and engage the citizens in sustainability and environmental issues

Sustainability

- Everybody's doing it, but most of it is behind the scenes
 - Rooftop solar
 - Recycling waste water
 - Permeable alleys
 - Improving insulation & weatherization
 - The list goes on... but they are all out-of-sight and out-of-mind for the average citizen on a daily basis



What DO People See Every Day

- Streets
- Sidewalks
- Bus Stops
- Parks
- Playgrounds
- Schools



The Challenge in Five Pictures













And The Real Costs May Be Surprising

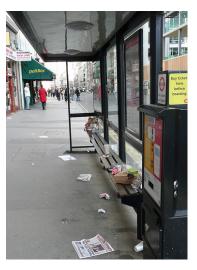
Average annual collection costs per trash



City Streets \$1,785



Parks \$1,772



Transit Stops \$2,777

Note: Based on Customer data and BigBelly Solar collection cost analyses

Route length/density - Vehicle costs - Fuel - Collection frequency - Staff costs



How Do You Make a Difference?

- How do you control litter?
- How do you prevent household dumping?
- How do you keep the animals out?
- How do you fund a recycling collection operation?
- How do you keep trucks off the streets?
- How do you free up staff for pressing needs?





It Starts With Data

- What is driving your waste collection today?
 - Citizen complaints?
 - Routine & habits?
 - Availability of resources?
- You are likely over-collecting some areas, while not getting to trouble areas enough
 - Because you don't really know what's happening out there!

Using Technology to Get a Real-Time View of the Situation

- Machine-to-Machine (M2M) technology has introduced incredible efficiencies into many previously labor-intensive operations
 - Water Metering
 - Parking Enforcement
 - Toll Collection
 - Traffic & Street LightsManagement





Generating & Utilizing Data on Waste

- With real-time information about each receptacle, cities can now:
 - Eliminate unnecessary collections
 - Ensure there are no overflows
 - Optimize capacity using historical data
 - Reduce vehicle and fuel usage
 - Create the most efficient routes & schedules
 - Have transparency & visibility into the operation



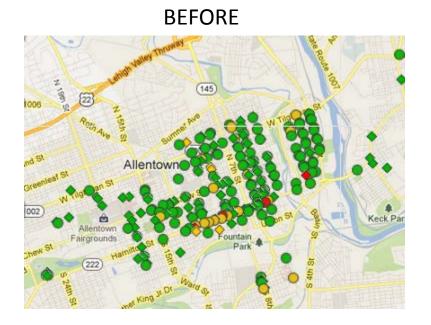


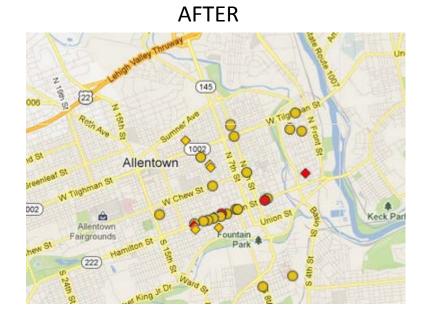
A Solution in Action

- BigBelly Solar has been providing intelligent waste & recycling collection solutions to cities, campuses & other organizations for a decade
- More than 1,000 customers in every state and 45+ countries
- Tens of thousands of waste & recycling stations on city streets, transit stops & parks

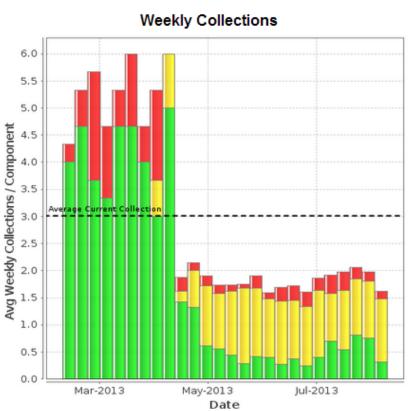
How Does It Work?

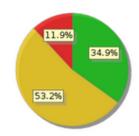
 Real-time information lets crews focus on the locations that ACTUALLY need to be collected



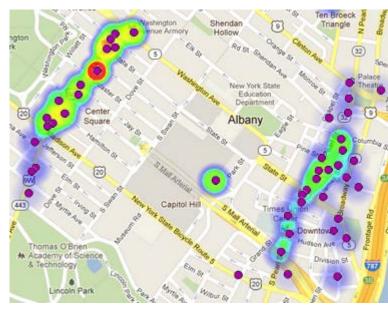


Historical Reports Drives Planning





Collections	
Total	1769
Red	211
Yellow	941
Green	617
Avg Weekly Collections per Component	3.0



Resourcing Recycling

- Even after you get bins, recycling isn't "free"
 - Separate collections
 - Separate sorting
 - Specialized vehicles for combined collection
- Creating a more efficient waste collection program frees up resources for recycling
 - And the same efficiencies make the recycling program less expensive to implement



Example: Philadelphia

Trash cans 700 - 500/210

Route Capacity 21k - 113k gallons

Pickups 17 - 2 week

Dedicated staff 33 - 9



Monthly Collection Costs

70% cost reduction

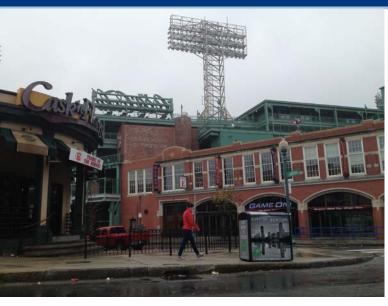
Years 1-3

Current

"The solar compactors have been an instant hit and a win-win for everybody." -Carlton Williams Deputy Commissioner, Streets and Sanitation, City of Philadelphia



Years 4-10



Example: Boston

Citizens

- 610 locations
- Deployed in all Neighborhoods

City

- Collections down 7 to 3 times/week
- Free up 14k+ labor hrs/yr
- Save \$350k+ fuel and labor \$/yr

Environment

- Added public space recycling 60%
- Reduced CO2 by 250+ tons/yr

Example: Central Florida Regional Transportation Authority

Collections frequency

6 Collections / week



1 Collection / week



Contractor liability

Remote monitoring of stations has allowed LYNX to use performance penalties when dealing with outside contractors

Reduce complaints

3 Complaints / week to upper management



O Complaints / week to upper management



Case Study: Times Square Alliance





Challenges Faced

900 Bags of Garbage Generated Per Day resulting in:



Each Can Was Serviced 4 Times Per Day Regardless of Fullness



Objectives of Program

- Reduce the Bags on The Street
- Reduce the Collection Frequency
- Increase Public Recycling in Times Square

Implementation Details

- Initial Pilot Program of 30 Triple Station Receptacles in the heart of Times Square.
- Funded by a grant from the ALCOA Foundation



Stakeholders

- Times Square Community including visitors, residents, businesses and property owners
- New York City Sanitation Department
- ALCOA Foundation

Funding

- Pilot Program funded by a grant from The ALCOA Foundation
- Expansion funded by the Times Square Alliance

Results

- Improved Operational Efficiency
 - Servicing of the cans reduced from 4 times a day to four times a week
- Reduction in bags left on street for collection
- Increased revenue potential through advertisements and sponsorships

Next Steps

- Expand Program throughout the district
 - 14 additional triple station receptacles ordered
 - Goal is 300 receptacles in Times Square
- Seek outside funding through sponsorship opportunities



Case Study: City of Hartford, CT



Challenges Faced

- Budget Cuts
- Demand vs. Staff Capacity
- Servicing Difficulties
- Array of Trash Cans
- Respect for the City









Objectives of Program

- Create a Uniform Trash Collection System
- Increase Trash Operations Efficiency & Cost Savings
- Increase the Quality of Life
- Promote the Mayor's Anti-Litter Campaign

Implementation Details

- Initial Installment of 30 Double Station
 Compactors in the City Parks and 4 Downtown.
- Initial Funds provided by DPW
- Phase I of our Uniform Trash Collection System with 40 Single Compactors in November 2012
- Funded by Livable & Sustainable Neighborhoods Initiative (LSNI)
- Use current Big Belly data to justify new installments in selected locations



Stakeholders

- The Mayor's Office and City Council
- Spanish-American Merchant Association (SAMA)
- Local Neighborhood Community Groups (NRZ)
- City of Hartford Department of Public Works (Sanitation and Parks Crew)

Funding

- Mayor Segarra's Livable & Sustainable Neighborhoods Initiative:
 - Bond Funds
 - Anti-Blight Fund

Results

- Improved Operational Efficiency
 - Allows for Reducing Trash Collection to Twice/Week
 - Increase in Trash Control/ Reduction in Complaints
 - Cost Savings in Fleet and Overtime
- Increase in Quality of Life
- Reduction in "Garbage Picking"
- Increased Support and Trust from Community Stakeholders



Next Steps

- Continue Phased Installments
 - Phase II in November 2013
 - Goal: replace all conventional cans with Big Belly Stations on the Major Commercial Corridors
- Seek revenue potential through local sponsorships
- Use BigBelly Wraps to Celebrate/Brand our City's Neighborhoods

Questions/Comments?

Get a hands-on demonstration at Booth #1033



