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

lly

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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 Lights Management

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

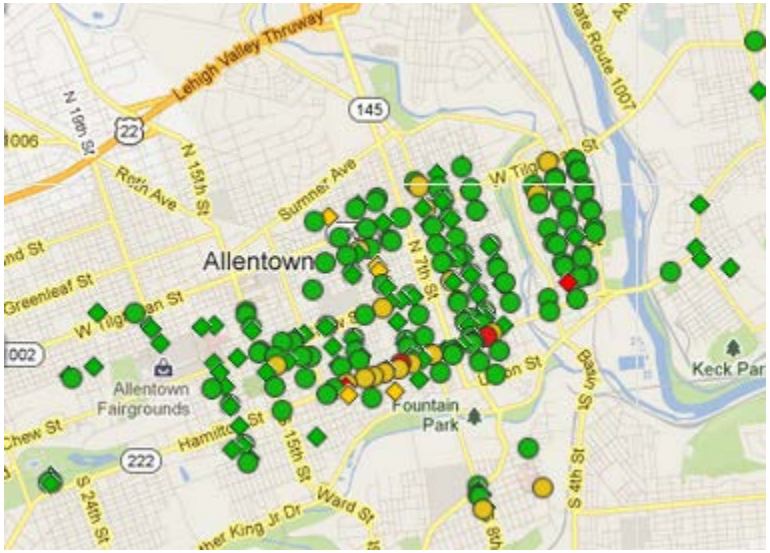
A Solution in Action

- 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

BEFORE



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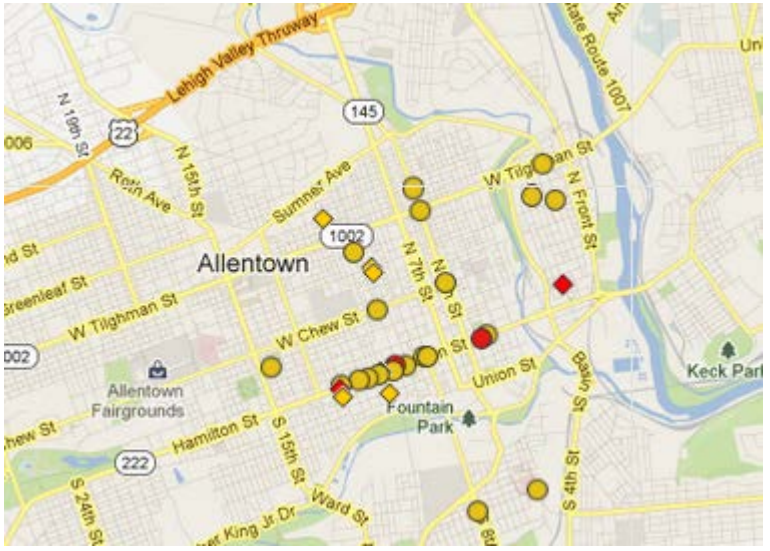
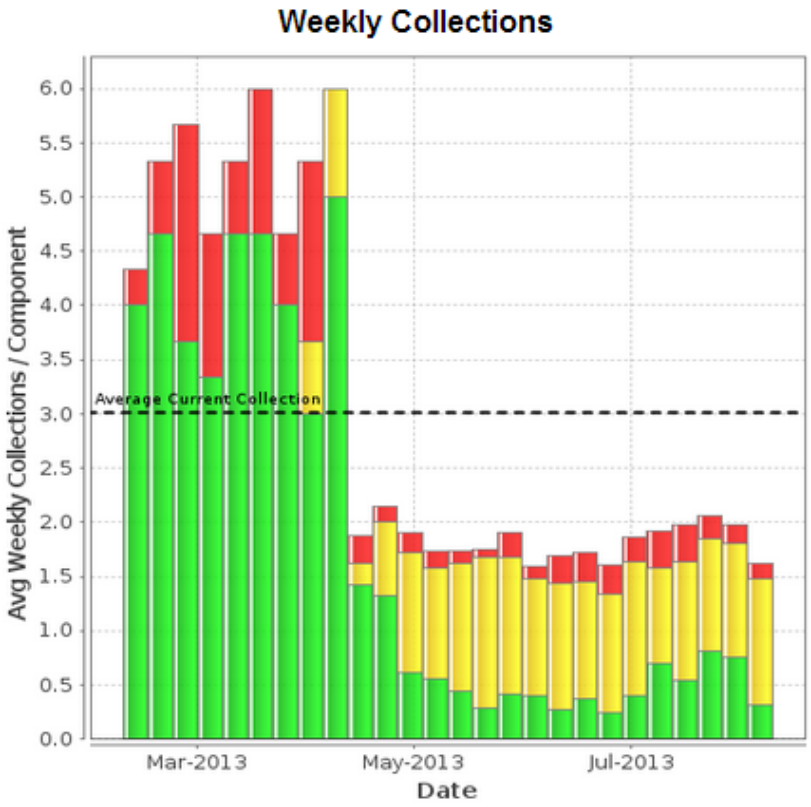
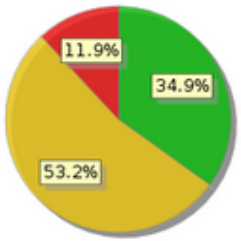
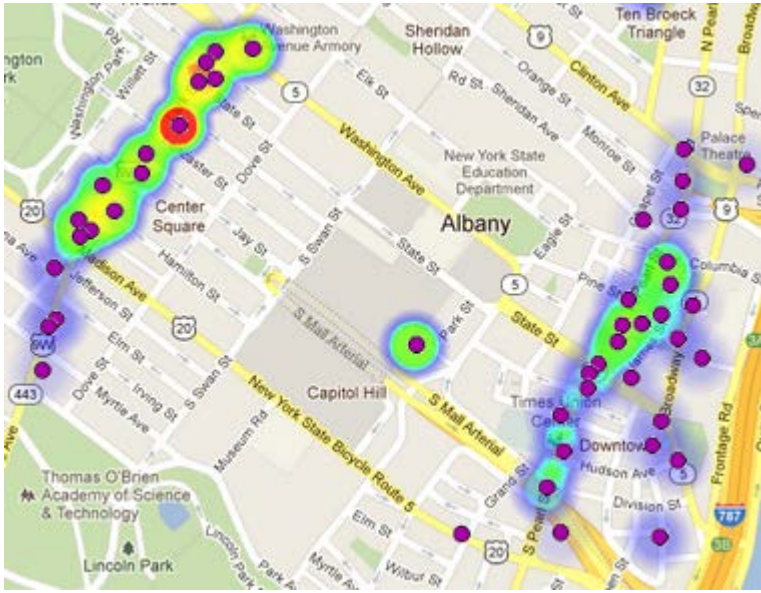


Historical Reports Drives Planning





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



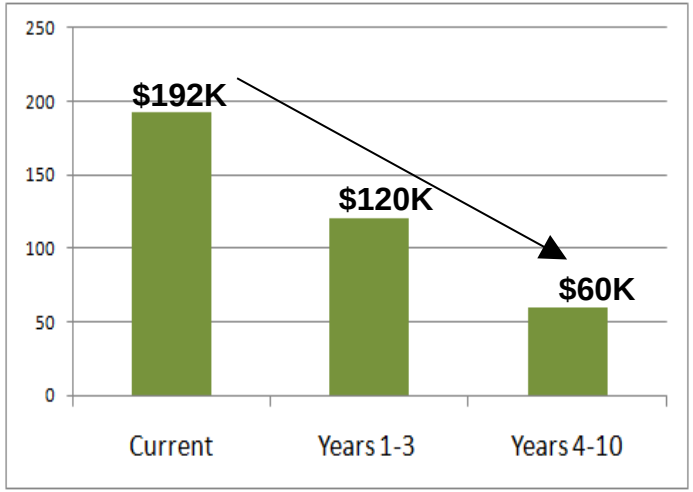
Resourcing Recycling

- 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
($000 – initial 500 units)



70% cost reduction

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

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

0 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

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