The Smart Grid for Waste & Recycling

Transforming an Industry with Smart City Technology

Matt Volpi
Director of Product Marketing
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Fear, Instincts & Complacency = Inefficiency

Still have issues despite over-resourcing

Wasted Resources (red)

Collection Requirements per Location

Excessive collections, and

Still have unpredictable overflows

Route collection frequency

Required collections (black)

< -------------- bins along a collection route -------------- >
There’s Gotta Be a Better Way

Right?
Four Enabling Technologies
Mix-and-Match Station Configurations
Information Facilitates Efficiency

Without Data & Compaction

With Data & Compaction
Reporting Facilitates Accountability

Capture diversion rate data – down to the individual location!

Watch collection frequency plummet as you improve your performance!

Real-time data from wherever you are with convenient mobile apps!
Historical Data Facilitates Optimization
Philadelphia Center City: Before and After

<table>
<thead>
<tr>
<th></th>
<th>Before</th>
<th>After, with BigBelly Solar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trash cans</td>
<td>700</td>
<td>• 500 BigBelly solar compactors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 210 single-stream companion recyclers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• CLEAN monitoring software</td>
</tr>
<tr>
<td>Shifts per week</td>
<td>3</td>
<td>1 (including overtime elimination)</td>
</tr>
<tr>
<td>Pickups/can/week</td>
<td>17</td>
<td>2.5 (85% reduction)</td>
</tr>
<tr>
<td>Dedicated staff</td>
<td>33</td>
<td>&lt; 9 (other staff reallocated)</td>
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$1M annual savings currently; $13M+ projected over 10 years