**Business Challenges**

It’s all about bridging the gap between service quality and rising operational costs. As customer demands evolve, waste tools have remained the same. Many government entities currently depend on traditional systems in waste cycle management including a scheduled waste service which ensures that dumpsters are emptied at pre-set times regardless of fill level. Collection services often lack real-time visibility, and this reliance on a fixed schedule and fixed rate system often result in:

- Inefficient collection schedules
- Overpaying for an under-utilized system
- Lack of visibility into service quality and container status

Many of these issues could be improved through increasing the visibility into waste cycle management, which could then result in more effective time and cost management.

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**AT&T Smart Waste Solutions Can Help**

AT&T delivers a connected waste management solution designed to solve the inefficiencies of traditional services. Instead of sticking to a predefined pick up schedule that remains consistent week after week, waste is picked up based on need. A sensor-based technology works to provide real time visibility and allow for optimized pickups and deliveries.

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**Potential Benefits**

- Enable dynamic collection routes
- Reduce dumpster overflow
- Decrease required resources and costs
- Reduce site visits
- Verify collections
- Reduce customer complaints
The potential benefits of this service will give the collecting organization increased visibility into volumes generated and they will know the status of the container in near real time. Miles driven by collection vehicles can be optimized, potentially eliminating useless pickups while service levels to other locations are fine tuned.

**Here's How it Works**

AT&T Smart Waste Solutions help organizations monitor waste over time by creating customized collection schedules; in turn, there is opportunity to reduce costs, accurately track and report waste and recycling pickup, implement service improvement and operate more sustainably.

**IoT Hardware**

Sensors are designed to monitor containers 24 hours a day, collecting data to power the predictive algorithm which works toward anticipating fullness and preventing container overflow by creating a custom collection schedule:

- Ultrasonic sonar measures uneven surfaces
- 3.6V Lithium battery 10+ year battery life, 5-year warranty
- Temperature safe: -50° – +90°C, GPS enabled, watertight, resistant to: humidity, salt mist, shock and dust

**Operational software** tracks waste behavior trends, tracks container and fleet status and service performance in real time.

**Operating partners** use **tablet app** for optimized, sustainable collection schedules and routes to service containers.

**IoT sensor** monitors waste containers.

By using dynamic operation management tools, organizations can create demand-based routes, voice guided turn-by-turn navigation and monitoring and reporting of plan deviations and collection issues such as blocked access or container damage in real time. Service delivery is optimized by avoiding the often time-consuming impediments right from the start.

By using APIs, AT&T Smart Waste Solutions also enable integration into existing ERP, CRM, End User Portals, Pricing Tools or route management software, thereby maximizing existing investments.

**Customer Portal**

Access waste data and insights via Hub Portal to enable:

- Collection schedules
- Container management – includes location, tilt and temperature alerts
- Fill level measurements
- Predictive analytics
- Collection detection and notifications

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**Features**

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Custom Reporting
The reporting tools allow you to access stored information to build reports in Excel or your existing software platforms:
• Hub Reports – Export collections and alerts
• API – Use RestAPI to integrate reporting into existing your software

Mobile Application
Information can be shared through a mobile application to communicate:
• Collections (past and future)
• Fill levels
• Maps of containers
• Service assistance

Scout Tool
Container stickers with QR codes can be used to report overflow, contamination, equipment damage and any other waste need.

Service Planning and Notifications
Analytics software connects sensors and specialized management tools.

Smart Plans are automated routes developed daily to create collection routes. These GPS guided itineraries are optimized based on:
• Container behavior predictive analytics
• Real time container activity (fill levels and collections)
• Customer set parameters

An in-field tablet application can provide:
• Daily Smart Plans sent automatically
• Voice guided turn by turn navigation
• Real time metric tracking
• Monitor and report plan deviations
• Collections problems instantly reported back from truck (contamination, blocked access, container damage, etc.)

The analytics software monitors your waste over time, providing you with data and insights aiming to:
• Reduce costs
• Accurately track and report waste and recycling
• Implement service improvements
• Operate more sustainably

AT&T Smart Waste Solutions fit existing containers, trucks and systems to create the most effective and cost-efficient waste practices – while keeping constituents happy and informed.

To learn more, please contact your AT&T Public Sector representative.
## Pricing

### One-Time Costs

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Price Per Sensor</th>
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</thead>
<tbody>
<tr>
<td>Hardware</td>
<td>WE-009 Sensor</td>
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<tr>
<td>Installation</td>
<td>Field services required for physical sensor installation</td>
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<td>Removal</td>
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<tr>
<td>Professional Services</td>
<td>Project Management and Reporting (Price per hour)</td>
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</table>

*Pricing for additional professional service needs listed under NASPO pricing for Professional Services from AT&T Mobility*

### Monthly Costs

<table>
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*Connectivity costs based on rate plans listed under NASPO pricing for AT&T Mobility Rate Plans*