



((SENSONEO))

February 16th, 2023

Jenn Harman & Sharon Smith
City of Nashville, TN

RE: WasteVision AI Proof of Concept

Dear Jenn & Sharon,

We appreciate your interest in how WasteVision AI (WVAI) can help automate the contamination detection process in residential recycling bins. As discussed, WVAI is a proprietary artificial intelligence and machine learning technology that leverages existing on-truck camera technology to automatically identify contamination in residential bins and tie them back to the residence.

We are willing to provide the city with two (2) WVAI license and the needed on-truck connected camera technology, without cost or obligation for a period of 90 days. The first truck will have a Smart Witness camera system. Once beginning the Proof of Concept, our Edge Device will be used on the second truck. This will allow your team to utilize the technology and determine how WVAI can help with residential contamination issues to aid your community education, warning and citation processes. The value of this PoC is \$2,500 per truck in hardware/installation and \$1,495 per truck per month for the WVAI licensing.

We will also collaborate with your team, at no charge, to format the data export so that city staff can best use it to administer the program. Typically, this is an export to your ERP system, but there are a variety of ways to transmit the data.

Should you or any member of the city staff have any questions, we would be glad to answer them in an online meeting or in written form. We look forward to the opportunity to collaborate with you to improve Nashville's residential recycling program.

Sincerely,

Shawn Prine

Business Development Manager- Sensoneo

cc: Barry Saunders, President



Pilot Program

Nashville, TN

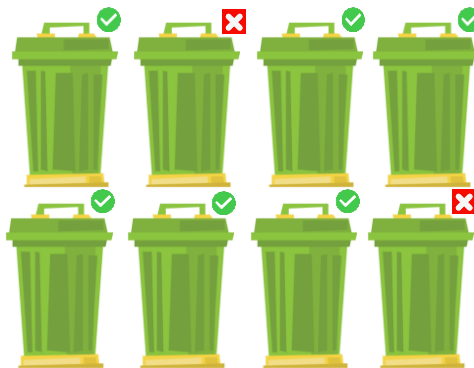
Waste Vision Enables Enforcement

Leverage Existing On-Truck Technology

(Camera Agnostic)



Run Photos/Videos through WasteVision AI Compliance Lens



Utilize Data for Enforcement at the point of disposal

WASTE01 - Waste Billing				
<input type="button" value="Back"/>				
Annual Plan ID:	29	Forest District:	DDK - Oshkosh Forest District	
Plan Year:	2005	Licenses:	0000012.00	
Reporting Unit ID:	66	Dispersed CV (%):	00	
Reporting Unit Status:	REJ - Rejected	Accumulated CV (%):	00	
Options:	Aggregate			
Blocks				
License No: Cutting Permit Block Transfer Mark		Net Area (ha) Block Status		
AS1001	100	1020	Est100	000 Approved
Primary Logging Completion Date: 2005-12-08 <input type="button" value="Submit"/>				
A0000	18	10	F00019	300 Approved
Total: 900.0				

WASTE01 - Waste Billing				
<input type="button" value="Back"/>				
Annual Plan ID:	29	Forest District:	DDK - Oshkosh Forest District	
Plan Year:	2005	Licenses:	0000012.00	
Reporting Unit ID:	66	Dispersed CV (%):	00	
Reporting Unit Status:	REJ - Rejected	Accumulated CV (%):	00	
Options:	Aggregate			
Blocks				
License No: Cutting Permit Block Transfer Mark		Net Area (ha) Block Status		
AS1001	100	1020	Est100	000 Approved
Primary Logging Completion Date: 2005-12-08 <input type="button" value="Submit"/>				
A0000	18	10	F00019	300 Approved
Total: 900.0				

Identify Contamination in Commercial and Residential Waste Streams

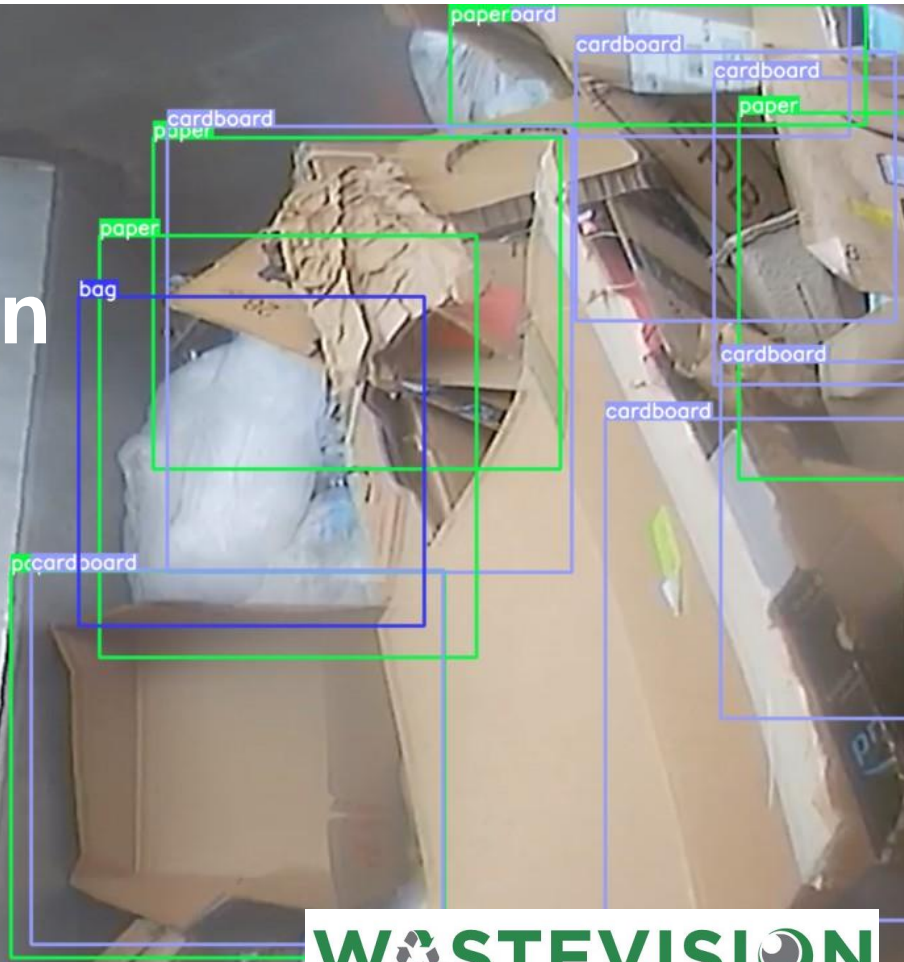
Critical Elements For Pilot Success- WasteVision AI

- ✓ Identify priority contaminants
- ✓ Enable access to hopper images
- ✓ Process images through WasteVision AI
- ✓ Generate reports to be used by City

Recycling Contamination



Recycling Contamination Phase I: *Bag Detection*





Metadata

ExternalID: 3b776ea7-a986-4c24-8144-9bd7b8da6f24

Latitude: 34.14994

Longitude: -118.25895

MediaWidth: 480

MediaHeight: 320

SourceUrls: /SmartWitness/RecorderService/GetDataFile/87080cd1-933aa45e8ab472.2.jpg,

TimeStamps: 2023-02-08T16:36:55.0020000Z,

Vendor Device ID: e18bfb27-3fbf-4490-bb9a-af7f011157c8

Vendor Event ID: 3b776ea7-a986-4c24-8144-9bd7b8da6f24

Glendale Example

Glendale Example (II)



Glendale Example (III)





Case Study:
MRF Busters

Bags, Diapers, Hoses, and Cords



christmas_lights 0.80

christmas_lights 0.30

Exception Report Summary

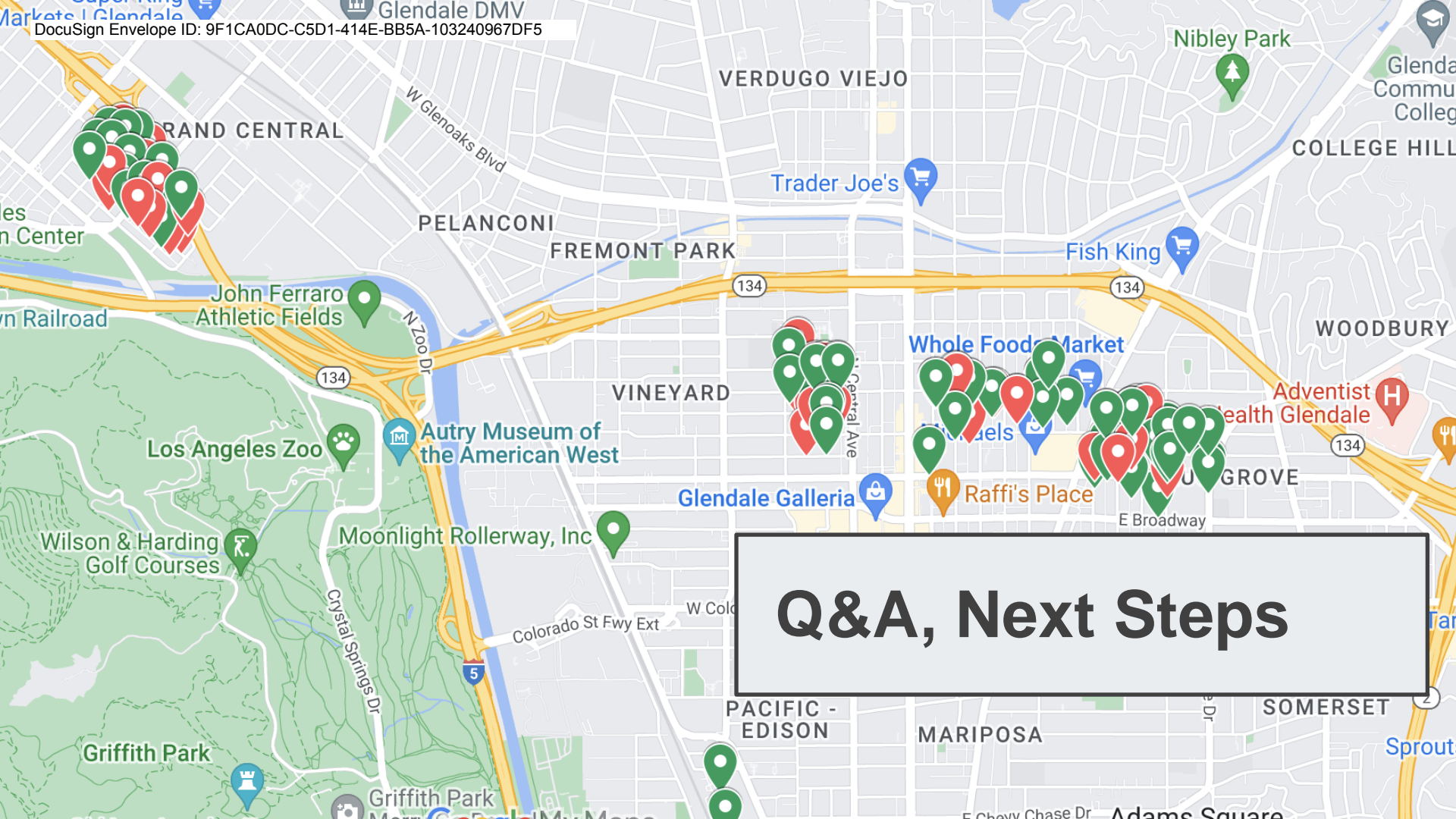
Media	TimeStamp	Device	Bags?	Yard	Cardboard	Bag	Latitude	Longitude
https://staging-app.wastevision.ai/	02/08/2023 14:52:11	TOMA1220086	No		0	0	34.13273	-118.26458
https://staging-app.wastevision.ai/	02/08/2023 15:02:04	TOMA1220086	No		0	0	34.1479	-118.24181
https://staging-app.wastevision.ai/	02/08/2023 15:03:07	TOMA1220086	No		0	0	34.14761	-118.2397
https://staging-app.wastevision.ai/	02/08/2023 15:04:40	TOMA1220086	No		0	0	34.14633	-118.24232
https://staging-app.wastevision.ai/	02/08/2023 15:06:31	TOMA1220086	No		0	2	34.14971	-118.24378
https://staging-app.wastevision.ai/	02/08/2023 15:07:58	TOMA1220086	No		0	0	34.1499	-118.24342
https://staging-app.wastevision.ai/	02/08/2023 15:09:29	TOMA1220086	No		0	1	34.14919	-118.2419
https://staging-app.wastevision.ai/	02/08/2023 15:10:44	TOMA1220086	No		0	0	34.14761	-118.24192
https://staging-app.wastevision.ai/	02/08/2023 15:11:47	TOMA1220086	Yes		0	1	34.14719	-118.24187
https://staging-app.wastevision.ai/	02/08/2023 15:56:42	TOMA1220086	Yes		0	3	34.15114	-118.24833
https://staging-app.wastevision.ai/	02/08/2023 15:59:26	TOMA1220086	Yes		0	2	34.15031	-118.24957
https://staging-app.wastevision.ai/	02/08/2023 16:01:53	TOMA1220086	Yes		0	2	34.15059	-118.25075
https://staging-app.wastevision.ai/	02/08/2023 16:04:10	TOMA1220086	Yes		0	3	34.14945	-118.25205
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https://staging-app.wastevision.ai/	02/08/2023 16:07:59	TOMA1220086	Yes		0	0	34.15066	-118.25272
https://staging-app.wastevision.ai/	02/08/2023 16:09:00	TOMA1220086	Yes		0	0	34.14967	-118.25272
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https://staging-app.wastevision.ai/	02/08/2023 16:24:21	TOMA1220086	No		0	3	34.15171	-118.26056
https://staging-app.wastevision.ai/	02/08/2023 16:26:12	TOMA1220086	Yes		0	3	34.15273	-118.26082
https://staging-app.wastevision.ai/	02/08/2023 16:28:09	TOMA1220086	Yes		0	0	34.15084	-118.26034
https://staging-app.wastevision.ai/	02/08/2023 16:29:32	TOMA1220086	Yes		0	4	34.15085	-118.26096
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https://staging-app.wastevision.ai/	02/08/2023 16:32:21	TOMA1220086	Yes		0	1	34.15171	-118.26076
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https://staging-app.wastevision.ai/	02/08/2023 16:36:55	TOMA1220086	Yes		0	0	34.14994	-118.25895
https://staging-app.wastevision.ai/	02/08/2023 16:38:06	TOMA1220086	Yes		0	0	34.14993	-118.26015
https://staging-app.wastevision.ai/	02/08/2023 16:39:31	TOMA1220086	No		0	0	34.15081	-118.26007
https://staging-app.wastevision.ai/	02/08/2023 16:49:27	TOMA1220086	Yes		0	2	34.14902	-118.25937
https://staging-app.wastevision.ai/	02/08/2023 16:50:58	TOMA1220086	Yes		0	1	34.14897	-118.26041
https://staging-app.wastevision.ai/	02/08/2023 16:52:38	TOMA1220086	Yes		0	1	34.14986	-118.25998

- Time / Date
- Location
- Exception type- bags
- Link to supporting media

Pilot Phases- WasteVision AI



Note: *Phases can be worked on in parallel.*



Q&A, Next Steps

SafetyVision: Identify Flammable Objects

Consumer Product Explosions Related to Lithium-Ion Batteries



E-scooter fires soar 300% in 2017
TODAY Online, February 8, 2018

We set you thinking
TODAY



Train car carrying Lithium batteries explodes near downtown Houston
Houston Chronicle April 26, 2017

There have been over 244 fires at MRFs this year
Waste360, December 22, 2016



Note: SafetyVision is a collaborative effort between WVAI and client to identify dangerous objects in waste streams. WVAI models are trained based upon images presented to the model. Some items are more easily identified than others. The SafetyVision model can be tailored to client specifications, but small or concealed items may not be detected in some instances. For example, propane tanks and LI devices (computers, scooters, etc...) are far easier to identify than individual batteries. As with other WVAI applications, the

Video of LI battery fire at MRFs: https://youtu.be/INSyryM_NTU

WVAI Solution Elements



Automated Data Capture

- Bin snapshots prior to service
- Precise geo-location
- Exact time of service
- Bin snapshots during service



WVAI Data Processing

- Automated overflow detection
- Detailed reporting
- Link to customer account via geo-location*



Verification Services

- Human review of exceptions
- Final billing decisions
- Entry of fees in billing system*

Case Study: Reporting Overflowing Containers

Based on JLT truck- 1 month with ~ 2,300 commercial lifts

Without WVAI

- Dependent on driver reporting
- Extra-step for driver and service team
- Reported <30 overflows(?)

WVAI Visibility and Automation

- Automated reporting on all lifts
- No driver action required
- WVAI identified 302 overflows
 - Generated >\$18k monthly revenue
 - Opportunity to upsell customers

Automated reporting generates significantly monthly revenue



1: TRASHONLY 0.916
2: 961500262 0.998

Service Verification

bag



bag



bag



bag



Privacy Policy

This Privacy Policy describes Our policies and procedures on the collection, use and disclosure of Your information when You use the Service and tells You about Your privacy rights and how the law protects You.

We use Your Personal data to provide and improve the Service. By using the Service, You agree to the collection and use of information in accordance with this Privacy Policy. This Privacy Policy has been created with the help of the Privacy Policy Generator.

The words of which the initial letter is capitalized have meanings defined under the following conditions. The following definitions shall have the same meaning regardless of whether they appear in singular or in plural.

For the purposes of this Privacy Policy:

- **Account** means a unique account created for You to access our Service or parts of our Service.
- **Company** (referred to as either "the Company", "We", "Us" or "Our" in this Agreement) refers to WasteVision AI, LLC and/or its platform provider Shakudo Inc.
- **Cookies** are small files that are placed on Your computer, mobile device or any other device by a website, containing the details of Your browsing history on that website among its many uses.
- **Country** refers to: The United States of America
- **Device** means any device that can access the Service such as a computer, a cellphone or a digital tablet.
- **Personal Data** is any information that relates to an identified or identifiable individual.
- **Service** refers to the Website.
- **Service Provider** means any natural or legal person who processes the data on behalf of the Company. It refers to third-party companies or individuals employed by the Company to facilitate the Service, to provide the Service on behalf of the Company, to perform services related to the Service or to assist the Company in analyzing how the Service is used.
- **Third-party Social Media Service** refers to any website or any social network website through which a User can log in or create an account to use the Service.

- **Usage Data** refers to data collected automatically, either generated by the use of the Service or from the Service infrastructure itself (for example, the duration of a page visit).
- **You** means the individual accessing or using the Service, or the company, or other legal entity on behalf of which such individual is accessing or using the Service, as applicable.

PERSONAL DATA

While using Our Service, We may ask You to provide Us with certain personally identifiable information that can be used to contact or identify You. Personally identifiable information may include, but is not limited to:

- Email address
- Usage Data

USAGE DATA

Usage Data is collected automatically when using the Service.

Usage Data may include information such as Your Device's Internet Protocol address (e.g. IP address), browser type, browser version, the pages of our Service that You visit, the time and date of Your visit, the time spent on those pages, unique device identifiers and other diagnostic data.

When You access the Service by or through a mobile device, We may collect certain information automatically, including, but not limited to, the type of mobile device You use, Your mobile device unique ID, the IP address of Your mobile device, Your mobile operating system, the type of mobile Internet browser You use, unique device identifiers and other diagnostic data.

We may also collect information that Your browser sends whenever You visit our Service or when You access the Service by or through a mobile device.

TRACKING TECHNOLOGIES AND COOKIES

We use Cookies and similar tracking technologies to track the activity on Our Service and store certain information. Tracking technologies used are beacons, tags, and scripts to collect and track information and to improve and analyze Our Service. The technologies We use may include:

- **Cookies or Browser Cookies.** A cookie is a small file placed on Your Device. You can instruct Your browser to refuse all Cookies or to indicate when a Cookie is being sent. However, if You do not accept Cookies, You may not be able to use some parts of our Service. Unless you have adjusted Your browser setting so that it will refuse Cookies, our Service may use Cookies.
- **Flash Cookies.** Certain features of our Service may use local stored objects (or Flash Cookies) to collect and store information about Your preferences or Your activity on our Service. Flash Cookies are not managed by the same browser settings as those used for Browser Cookies. For more information on how You can delete Flash Cookies, please read "Where can I change the settings for disabling, or deleting local shared objects?" available at https://helpx.adobe.com/flash-player/kb/disable-local-shared-objects-flash.html#main_Where_can_I_change_the_settings_for_disabling__or_deleting_local_shared_objects_
- **Web Beacons.** Certain sections of our Service and our emails may contain small electronic files known as web beacons (also referred to as clear gifs, pixel tags, and single-pixel gifs) that permit the Company, for example, to count users who have visited those pages or opened an email and for other related website statistics (for example, recording the popularity of a certain section and verifying system and server integrity).

Cookies can be "Persistent" or "Session" Cookies. Persistent Cookies remain on Your personal computer or mobile device when You go offline, while Session Cookies are deleted as soon as You close Your web browser. Learn more about cookies: [What Are Cookies?](#).

We use both Session and Persistent Cookies for the purposes set out below:

- **Necessary / Essential Cookies** Type: Session Cookies Administered by: Us Purpose: These Cookies are essential to provide You with services available through the Website and to enable You to use some of its features. They help to authenticate users and prevent fraudulent use of user accounts. Without these Cookies, the services that You have asked for cannot be provided, and We only use these Cookies to provide You with those services.
- **Cookies Policy / Notice Acceptance Cookies** Type: Persistent Cookies Administered by: Us Purpose: These Cookies identify if users have accepted the use of cookies on the Website.

- **Functionality Cookies** Type: Persistent Cookies Administered by: Us Purpose: These Cookies allow us to remember choices You make when You use the Website, such as remembering your login details or language preference. The purpose of these Cookies is to provide You with a more personal experience and to avoid You having to re-enter your preferences every time You use the Website.

For more information about the cookies we use and your choices regarding cookies, please visit our Cookies Policy or the Cookies section of our Privacy Policy.

The Company may use Personal Data for the following purposes:

- **To provide and maintain our Service**, including to monitor the usage of our Service.
- **To manage Your Account:** to manage Your registration as a user of the Service. The Personal Data You provide can give You access to different functionalities of the Service that are available to You as a registered user.
- **For the performance of a contract:** the development, compliance and undertaking of the purchase contract for the products, items or services You have purchased or of any other contract with Us through the Service.
- **To contact You:** To contact You by email, telephone calls, SMS, or other equivalent forms of electronic communication, such as a mobile application's push notifications regarding updates or informative communications related to the functionalities, products or contracted services, including the security updates, when necessary or reasonable for their implementation.
- **To provide You** with news, special offers and general information about other goods, services and events which we offer that are similar to those that you have already purchased or enquired about unless You have opted not to receive such information.
- **To manage Your requests:** To attend and manage Your requests to Us.
- **For business transfers:** We may use Your information to evaluate or conduct a merger, divestiture, restructuring, reorganization, dissolution, or other sale or transfer of some or all of Our assets, whether as a going concern or as part of bankruptcy, liquidation, or similar proceeding, in which Personal Data held by Us about our Service users is among the assets transferred.
- **Use of data:** We may use Your information for additional purposes, such as data analysis, identifying usage trends, determining the effectiveness

of our promotional campaigns and to evaluate and improve our Service, products, services, marketing and your experience.

We may share Your personal information in the following situations:

- **With Service Providers:** We may share Your personal information with Service Providers to monitor and analyze the use of our Service, to contact You.
- **For business transfers:** We may share or transfer Your personal information in connection with, or during negotiations of, any merger, sale of Company assets, financing, or acquisition of all or a portion of Our business to another company.
- **With Affiliates:** We may share Your information with Our affiliates, in which case we will require those affiliates to honor this Privacy Policy. Affiliates include Our parent company and any other subsidiaries, joint venture partners or other companies that We control or that are under common control with Us.
- **With business partners:** We may share Your information with Our business partners to offer You certain products, services or promotions.
- **With other users:** when You share personal information or otherwise interact in the public areas with other users, such information may be viewed by all users and may be publicly distributed outside. If You interact with other users or register through a Third-Party Social Media Service, Your contacts on the Third-Party Social Media Service may see Your name, profile, pictures and description of Your activity. Similarly, other users will be able to view descriptions of Your activity, communicate with You and view Your profile.
- **With Your consent:** We may disclose Your personal information for any other purpose with Your consent.

The Company will retain Your Personal Data only for as long as is necessary to meet the obligations of the contracted service. We will retain and use Your Personal Data to the extent necessary to comply with our legal obligations (for example, if we are required to retain your data to comply with applicable laws), resolve disputes, and enforce our legal agreements and policies.

The Company will also retain Usage Data for internal analysis purposes. Usage Data is generally retained for a shorter period of time, except when this data is

used to strengthen the security or to improve the functionality of Our Service, or We are legally obligated to retain this data for longer time periods.

Your information, including Personal Data, is processed at the Company's operating offices and in any other places where the parties involved in the processing are located. It means that this information may be transferred to — and maintained on — computers located outside of Your state, province, country or other governmental jurisdiction where the data protection laws may differ than those from Your jurisdiction.

Your consent to this Privacy Policy followed by Your submission of such information represents Your agreement to that transfer.

The Company will take all steps reasonably necessary to ensure that Your data is treated securely and in accordance with this Privacy Policy and no transfer of Your Personal Data will take place to an organization or a country unless there are adequate controls in place including the security of Your data and other personal information.

BUSINESS TRANSACTIONS

If the Company is involved in a merger, acquisition or asset sale, Your Personal Data may be transferred. We will provide notice before Your Personal Data is transferred and becomes subject to a different Privacy Policy. *You will be given the option to terminate service and recover Your Personal Data prior to any transfer if the different Privacy Policy cannot be modified to Your satisfaction.*

LAW ENFORCEMENT

Under certain circumstances, the Company may be required to disclose Your Personal Data if required to do so by law or in response to valid requests by public authorities (e.g. a court or a government agency).

OTHER LEGAL REQUIREMENTS

The Company may disclose Your Personal Data in the good faith belief that such action is necessary to:

- Comply with a legal obligation
- Protect and defend the rights or property of the Company
- Prevent or investigate possible wrongdoing in connection with the Service
- Protect the personal safety of Users of the Service or the public
- Protect against legal liability

The security of Your Personal Data is important to Us, but remember that no method of transmission over the Internet, or method of electronic storage is 100% secure. While We strive to use commercially acceptable means to protect Your Personal Data, We cannot guarantee its absolute security.

Our Service does not address anyone under the age of 13. We do not knowingly collect personally identifiable information from anyone under the age of 13. If You are a parent or guardian and You are aware that Your child has provided Us with Personal Data, please contact Us. If We become aware that We have collected Personal Data from anyone under the age of 13 without verification of parental consent, We take steps to remove that information from Our servers.

If We need to rely on consent as a legal basis for processing Your information and Your country requires consent from a parent, We may require Your parent's consent before We collect and use that information.

Our Service may contain links to other websites that are not operated by Us. If You click on a third party link, You will be directed to that third party's site. We strongly advise You to review the Privacy Policy of every site You visit.

We have no control over and assume no responsibility for the content, privacy policies or practices of any third party sites or services.

We may update Our Privacy Policy from time to time. We will notify You of any changes by posting the new Privacy Policy on this page.

We will let You know via email and/or a prominent notice on Our Service, prior to the change becoming effective and update the "Last updated" date at the top of this Privacy Policy.

You are advised to review this Privacy Policy periodically for any changes. Changes to this Privacy Policy are effective when they are posted on this page.

ORIGINAL

METROPOLITAN COUNTY COUNCIL

Resolution No. _____

A resolution authorizing the Metropolitan Government of Nashville and Davidson County, through the Department of Water and Sewerage Services, to enter into a recycling technology pilot program with Sensoneo and to accept a donation of \$14,000 for hardware integration, temporary licensing, and services associated with the program.

Introduced _____

Amended _____

Adopted _____

Approved _____

By _____
Metropolitan Mayor
