

Fighting Contamination with Mobile Technology

*2021 Northern Lights Chapter Online Conference
February 9, 2021*



The Problem



Putting the wrong stuff in the Blue Bin had a **\$10 million** impact in 2019

\$5 million reduction in revenue from the sale of recyclables

\$5 million increase in education/enforcement

To get a handle on the problem, Solid Waste began doing this...



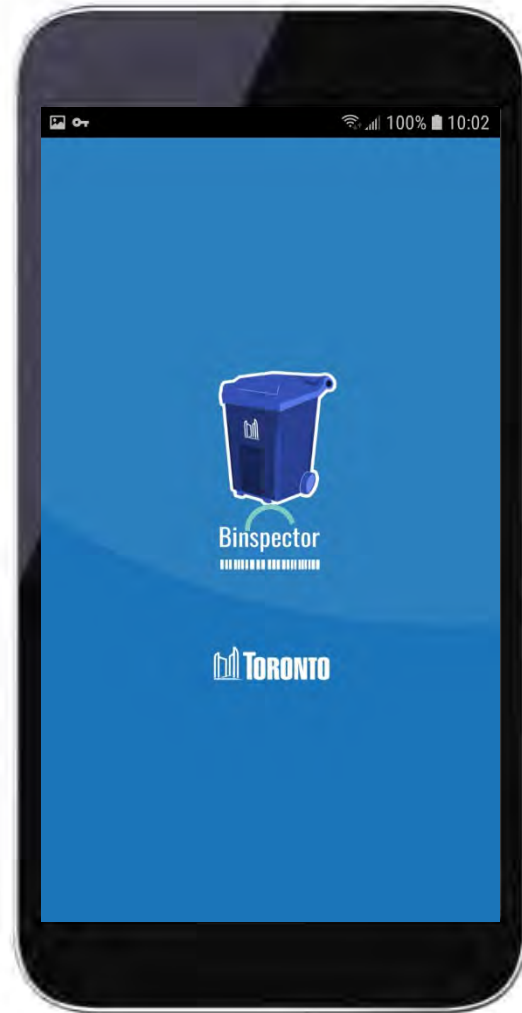
The Manual Process

1. Send staff out with clipboards.
2. Record inspection results on paper.
3. Put stickers on bins with contamination.
4. Take photos where possible with a digital camera.
5. Return to the yard at the end of the day.
6. Sit at a computer for 20-40 minutes manually transcribing inspection notes into a customized MS Access database, trying to figure out which photos on the camera correspond to which paper inspection reports.
7. Generate reports for management from the manually entered data in the MS Access database.

The Binspector-Enabled Process Transformation

1. Send staff out with **Binspector**.
2. Record inspection results **with Binspector**.
3. Put stickers on bins with contamination.
4. Take photos **with Binspector**.
5. Return to the yard at the end of the day.
6. ~~Sit at a computer for 20-40 minutes manually transcribing inspection notes into a customized MS Access database, and trying to figure out which photos on the camera correspond to which paper inspection reports.~~
7. Generate reports for management **from daily extracts automatically generated by Binspector and sent to yard staff every day at 3:30 pm.**

DEMO



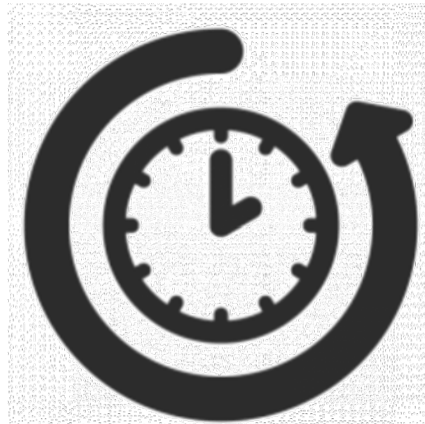
Benefits



SPEED



ACCURACY

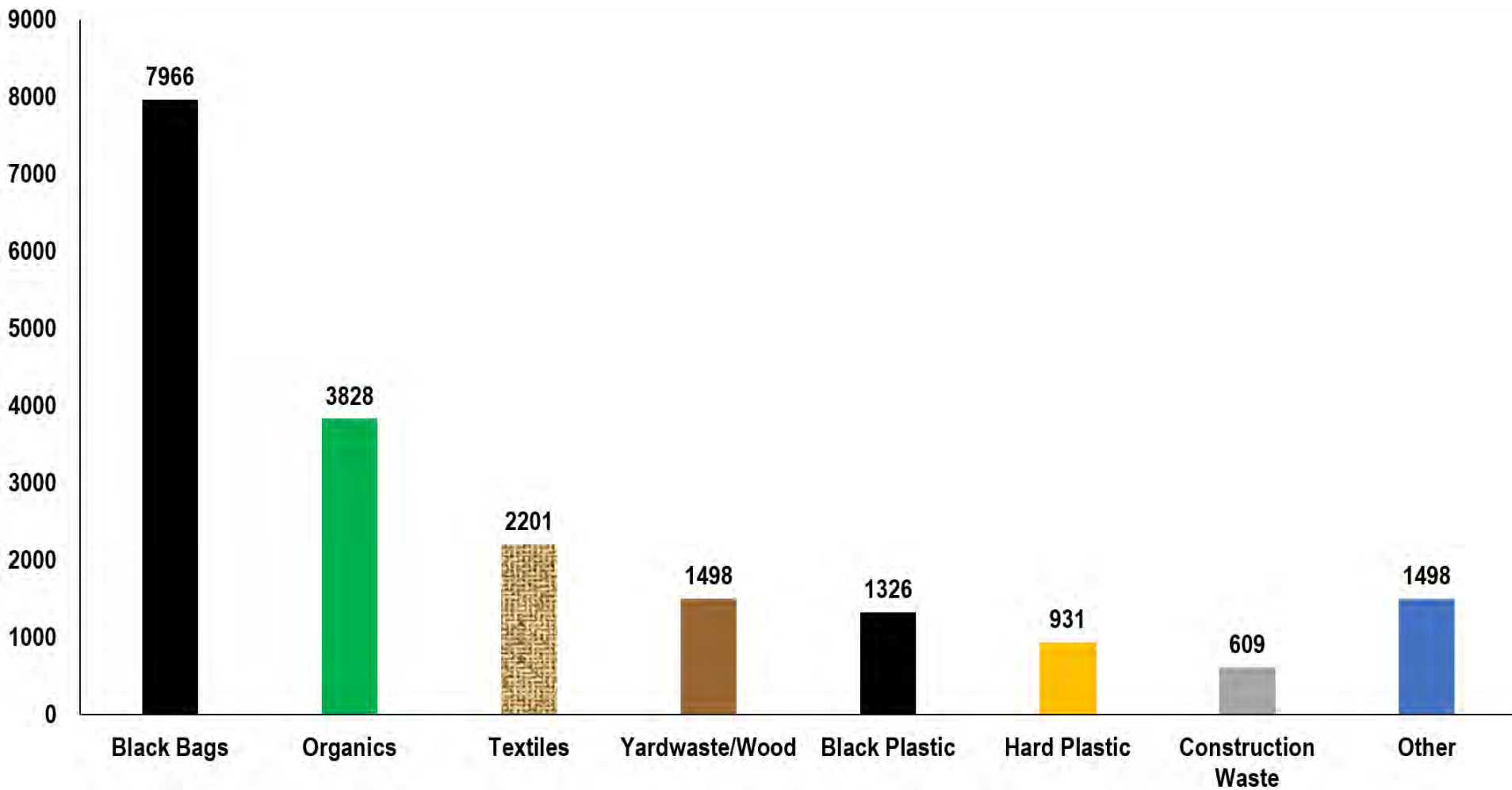


TIME SAVINGS

The Data! (2019)

Month	Inspections	Pass	Already Collected	Not Set Out	Fail	Fail%
April	58,875	46,302	3,425	7,685	1,463	3.06%
May	100,262	79,440	6,324	11,356	3,142	3.80%
June	80,080	65,129	3,696	8,552	2,703	3.98%
July	59,617	45,610	4,627	7,038	2,342	4.88%
August	55,720	40,064	8,057	5,530	2,069	4.91%
September	52,960	39,338	6,755	5,292	1,575	3.85%
October	42,586	29,625	5,784	6,244	933	3.05%
November	18,564	13,979	1,508	2,573	504	3.48%
8 MONTH TOTAL	468,664	359,487	40,176	54,270	14,731	3.94%
MONTHLY AVERAGE	58,583	44,936	5,022	6,784	1,841	3.94%

Top Contaminants - 2019



What's Next? Closed Landfill Monitoring

- Closed Landfill Monitoring app:
 - Gas monitoring
 - Water quality monitoring
 - Eliminate pen and paper
 - Standardize data capture
 - Location services/mapping
 - 160+ closed landfill locations around the GTA
 - Regulatory compliance



KVL Purge Well Inspection Field Form

DATE: Feb 24th 2020 Technician: J. Neri Temp / Weather: clear -5°C

LOCATION	TARGET WATER LEVEL (m)	Qs approx. L/min/m	WATER LEVEL (m)	FLOW RATE (l/min)	TOTALIZER READING (m ³)	TIME	OBSERVATIONS AND ADJUSTMENTS	FOLLOW-UP			
								FLOW	WATER LEVEL	DATE TIME	COMMENTS
PW1/10	47.5	2.0	47.91	3.131	33887.6		✓				
PW1/83	46.3	3.0	46.50	27.533	86567.1		✓				* flow reading varies from 7.9-23
PW 4/95	46.2	9.0	45.50	52.074	28689.0		✓				
PW 6/82	40.0	12.0	38.26	31.722	23381.1		maxed				
PW 3/81	37.5	5.0	37.15	46.151	13932.6		✓				
PW 7/82	35.7	8.0	under repair				✓				
PW 3/95	31.4	4.0	30.55	17.203			✓				
PW 8/82	30.5				75448.0		✓				
PW 1/96		2.0	28.34	4.8616	22205.1		✓				
PW 2/95	28.1	3.0	27.17	3.75	630.93		✓				
PW1/95	29.6	1.0	28.64	6.5114	35061.3		✓				
PW 1/87	27.6	10.0	25.35	139.72	46789.5		maxed				
PW 1/14	18.0	50.0	under repair				✓	↑ on Feb 26	190.77	16.54	↑ to 250.47
PW 1/91	24.0	11.0	under repair				✓	↑ on Feb 26	127.48	22.94	↑ to 141.23
PW 2/02	16.5	28.0	15.47	166.38	73668.7		maxed				
PW 1/02	17.8	10.0	17.84	49.83	40974.0		✓				

Thank you!



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