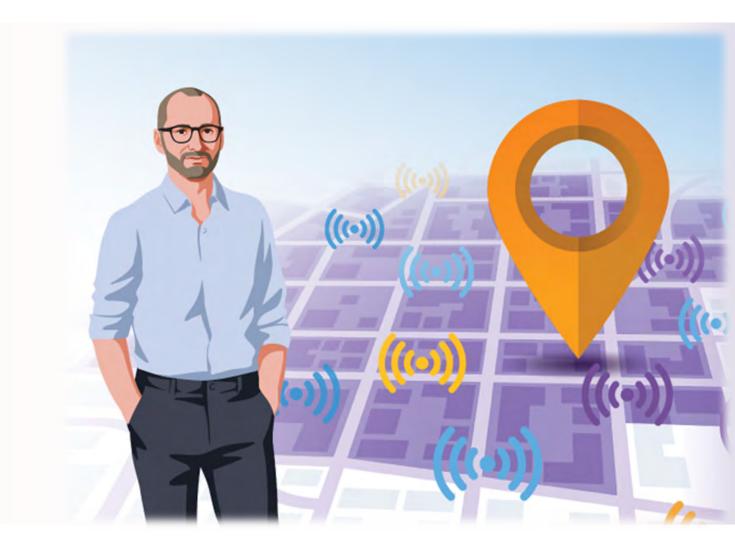
Managing Change: Recovery and the New MobileScapes





Today's Presenters



Evan WoodEVP, Chief Strategy
Officer



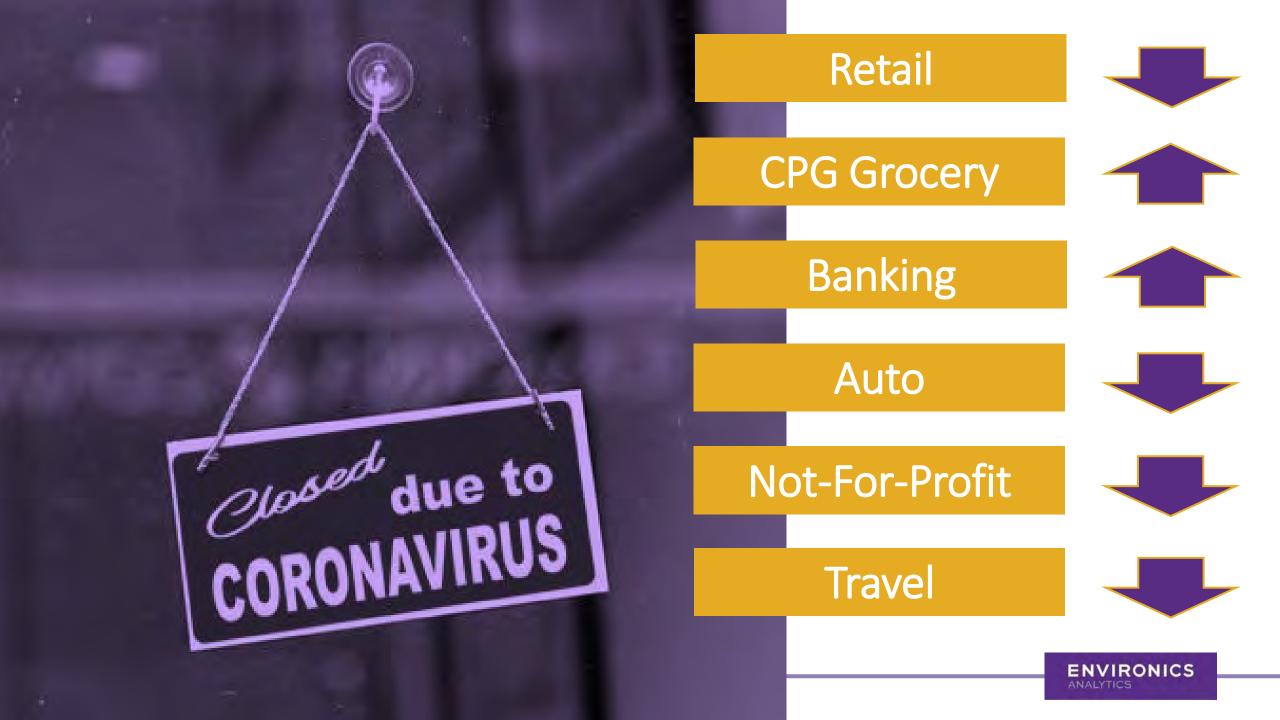
Peter Miron SVP, Research and Development



Casey Price
SVP and Practice
Leader







COVID-19 Behaviours - New Norms?











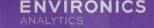


O P E N BUSINESS AS NEW NORMAL

- Who is starting to move? How quickly? How far?
- Who is visiting local businesses and when?
- Which citizens are accessing parks or using public transportation?
- Are the same people coming back to bank branches as during pre-pandemic times?
- How has grocery shopping changed pre- and postpandemic? How can this help with sales forecasting?



Leveraging Mobile
Movement Data to
Understand Changing
Consumer Behaviours



What are Mobile Movement Data?

Anonymized, permission-based data collected from location-enabled apps on mobile devices

- Unique, persistent, anonymous device ID, along with a day, time and location for each observation
- All observed latitude and longitude coordinates are moved to the nearest 6-digit postal code
- Researchers can "observe" devices within a defined area such as a store, public square or on a roadway for a given date and time range
- The common evening location (CEL) and common daytime location (CDL) are inferred according to where these devices are most frequently observed during the day and at night

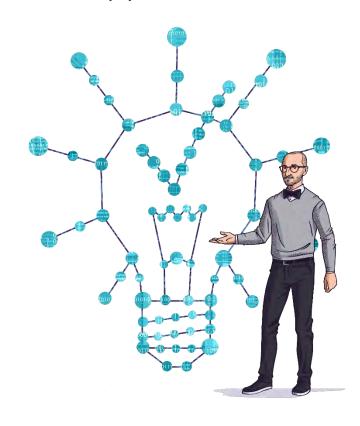


Why MobileScapes?



The most comprehensive, accurate and up-to-date mobile movement database available for marketing and other business applications.

- 3 combined sources of high-quality data
- 100% privacy compliant
- Updated daily
- Weighted to general population for accurate representation
- Available at the postal code level and linked to EA's 30,000 data points
- Easily accessible through EA's analytics platforms, via
 API calls, as data extract files and in project work



MobileScapes Product Suite



The MobileScapes mobile movement database is easily accessible in configurations to suit various business needs.

1

MobileScapes ENVISION

Using ENVISION's user-friendly interface, quickly analyze large volumes of mobile movement data by location (using hand-drawn polygons, existing location files or the new EA geofence library).

2

MobileScapes Plus

Access MobileScapes data or configured extracts via API or as flat files for use in your tools, and monitor activity weekly or monthly.

3

MobileScapes Out & About

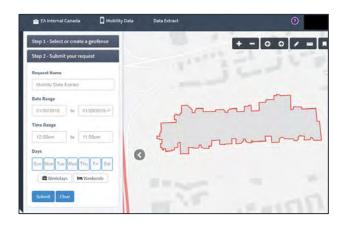
Understand movement at the neighbourhood level: who leaves home, goes out to work, to shop, for recreation, on which days, at what time of day.



1. MobileScapes ENVISION

New enhanced data and functionality in EA's software platform.

Geofence



Draw or import a shape and select timeframe, days or dayparts for the retrieval

Use a geofence from EA's new extensive and accurate library

Data



Creates two data files: Common Evening Locations Common Daytime Locations

Data normalized and weighted to gen pop by EA methodologists

Output



Usable with 30,000 data variables and in maps, dashboards and tables in ENVISION

Weekly and monthly reports available to monitor change



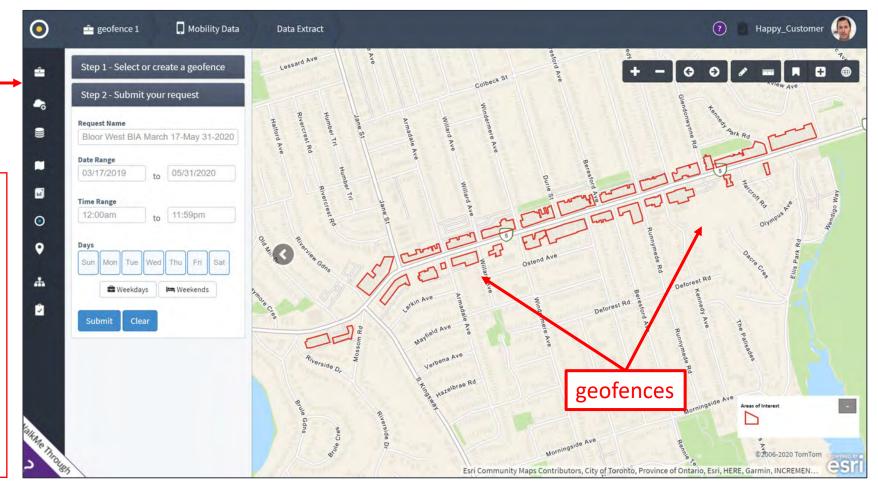
New Geofence Library



40,000 Polygons

- Grocery
- Drug
- Mass Merchandisers • Coffee Shops
- Malls
- Greenspaces
- Golf Courses

- Banks
- Credit Unions
- Auto Dealerships
- Category Killers Restaurants (QSR and Sit Down)
 - Retailers





2. MobileScapes Plus

MobileScapes Plus provides flexibility to access standard and configured mobile movement data extracts outside ENVISION.

- Any type of configured, then standardized deliverables:
 - Data extracts accessed via APIs
 - Weekly/monthly reports
 - Tableau dashboards
 - Other client-defined extracts
- Provides weekly data (historical and future)
- Weighted or unweighted data available
- User-defined geofence size expanded to 5MM square feet;
 unlimited geofence size when using EA's new geofence library



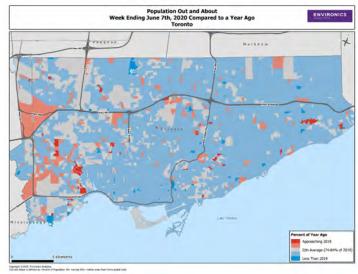


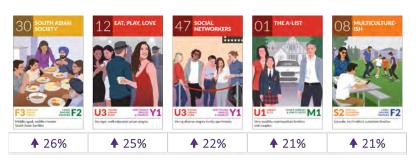


3. MobileScapes Out & About

MobileScapes Out & About identifies the movement of populations at the neighbourhood level.

- In ENVISION as a standard database or outside ENVISION as a flat file
- Weekly monitoring reports included
- Historical data from Jan 1, 2019
- Built at DA level, then rolled up to geographies
- Weighted to Pop 15+
- Available by weekpart and daypart, with dayparts available for weeks and weekends
- Two levels: base insights & add-on insights







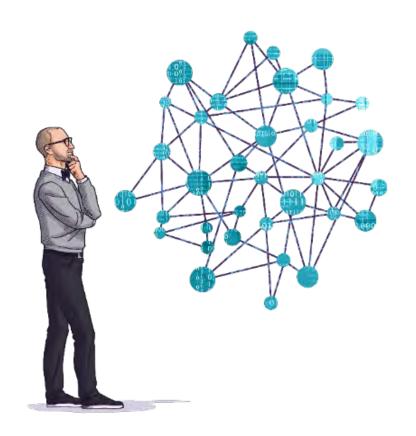
3. MobileScapes Out & About Details

Base & Add-O	
Base Insights	 Population going out (beyond 500 metres from inferred home location) What time of day are they going out? How far are they going out? How long are they observed away from home when they're out?
Add-On Insights	 Purpose: work, school or other Outdoor activity – running, hiking, going to parks, etc. Shopping/economic/commercial activity Heavy commuter rail use
In Progress	9) Expanded mode of transportation variables



MOBILE MOVEMENT DATA

Methodology, Practicality and Privacy





Guiding Principles of Mobile Research



Intelligence Infused

Incorporate our expertise to produce population estimates rather than device counts

Automatically adjust for bias, both spatial and temporal



Automated

Use pre-defined geofences where available

Allow custom geofence ingestion

Pre-build complex estimates where appropriate

Data updated in near real time (daily)



Compliance Certified

Results from the system are presanitized prior to distribution

Onus of compliance handled automatically by tools



Accessible

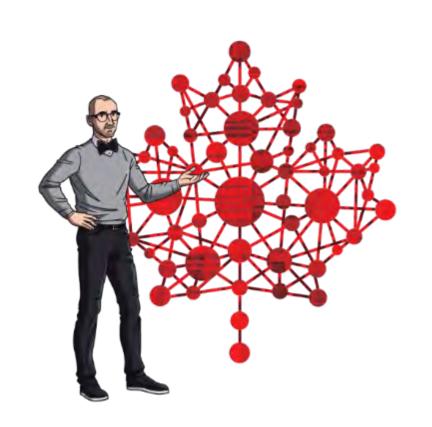
Tools for querying the data accessible from both within and outside of ENVISION (APIs)

Tools should handle: one-off queries, multisite analysis and pre-structure ongoing reporting



DATA APPLICATIONS

Using Mobile Movement Data Across Industry Sectors









Evan Wood



Peter Miron



Casey Price

DATA APPLICATIONS

Using data to power insights





Agenda

Use case #1: Bloor West Village

• Use case #2: Financial institution example



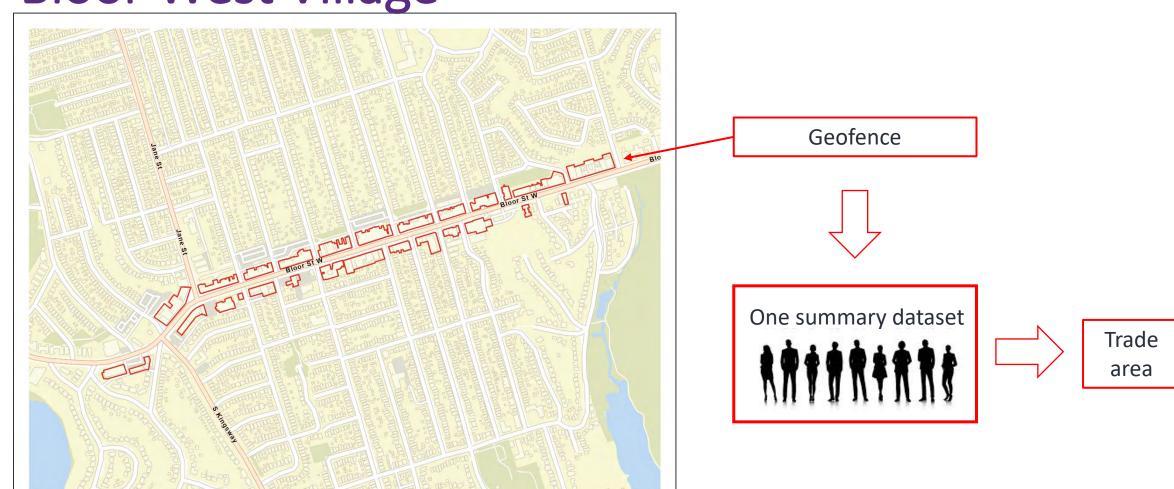
Use Case #1 Bloor West Village



Bloor West Village

Additional Sources: Esri Community Maps Contributors, City of Toronto, Province of Ontario, Esri, HERE, Garmin, INCREMENT P, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, NRCan, Parks Canada, Powered By ESRI

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What are trend reports?

Trend reports compare the visitors that went to a specific geofence location over two time periods including a current time period as well as the same time last year. This comparison highlights any changes in the makeup or description of people who visited locations year over year. Figures within the reports have been generalized to Population 15+ years old to more closely emulate the true number of people that visit a physical location. Trend reports have been created for PRIZM to help identify WHO your customers are year over year. Demostats trend reports illustrate how the demographic descriptions of your visitors may have changed and Wealthscapes – our product that essentially looks at the balance sheet of Canadians year over year.



Bloor West Village – Trend Reporting

DemoStats - MobileScapes Trend | Demographic Highlights

Geofence: Bloor West Village
Customer Level: Unique Visitors

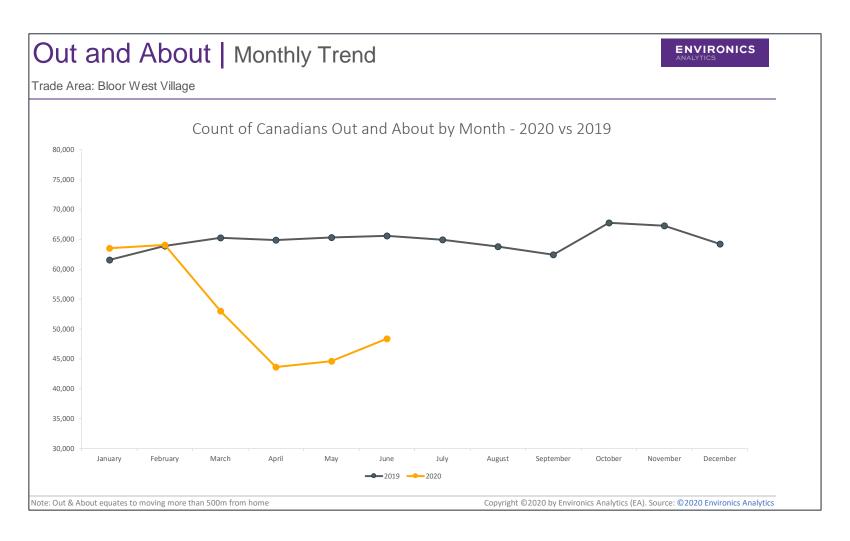
Filter: No filter

Filter: No filter			
	2020-01-01 - 2020-06-30	2019-01-01 - 2019-06-30	Trend
	% Comp	% Comp	% Change
Basics			
Total Population	100.00	100.00	0.00
Total Households	100.00	100.00	0.00
Age of Household Maintainer			
15 To 24	3.50	3.50	0.01
25 To 34	22.62	21.59	1.02
35 To 44	22.57	22.58	-0.02
45 To 54	17.40	17.88	-0.48
55 To 64	15.78	16.12	-0.34
65 To 74	10.41	10.53	-0.13
75 Or Older	7.72	7.79	-0.07
Size of Household			
1 Person	36.03	33.90	2.13
2 Persons	30.44	29.87	0.57
3 Persons	14.11	14.71	-0.59
4 Persons	11.67	12.74	-1.07
5 Or More Persons	7.75	8.78	-1.03
Household Type			
Total Family Households	57.87	60.31	-2.44
One-Family Households	55.59	57.52	-1.93
Multiple-Family Households	2.28	2.79	-0.51
Non-Family Households	42.13	39.69	2.44
One-Person Households	36.24	34.11	2.13
Two-Or-More-Person Households	5.89	5.59	0.31

- > In maintainers age 15-34 visiting Bloor West in first part of the year
- < Decrease in maintainers 35+ visiting Bloor West in first part of the year.
- Increase in single person households



Bloor West Village – Monthly Trend Report



Highlights

- Decrease in trips
- Slight increase as legislation re-opens certain locations with conditions



Bloor West Village – Activity Trend Report

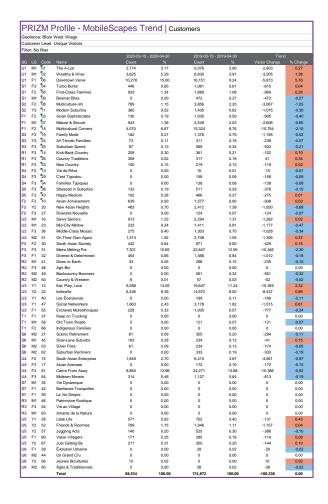
Out and About | Activity Trend **ENVIRONICS** Trade Area: Bloor West Village April 2020 **April 2019** Change Count % Pen Index Count % Pen Index Absolute Basics Household Population 15+ 79.677 100.00% 1.45% 100 78,137 100.00% 1.44% 100 1.540 1.97% Out & About 1.41% -21.275 43.612 54.74% 1.48% 102 64.887 83.04% -32.79% Dayparts 12:00 AM to 6:00 AM 7,268 9.12% 1.15% 79 9,979 12.77% 1.16% 81 -2.711-27.17% 6:00 AM to 9:00 AM 12.856 16.14% 1.26% 87 26.956 34.50% 1.31% 91 -14.099 -52.31% -49.77% 9:00 AM to 12:00 PM 20,804 26.11% 1.39% 96 41,419 53.01% 1.41% 98 -20,614 12:00 PM to 3:00 PM 25,924 32.54% 1.43% 99 47,451 60.73% 1.40% 97 -21,527 -45.37% 3:00 PM to 6:00 PM 26.798 33.63% 1.44% 47.872 61.27% 1.38% 96 -21.074 -44.02% 6:00 PM to 9:00 PM 18,608 23.35% 1.35% 93 36,857 47.17% 1.33% 92 -18,249 -49.51% 9:00 PM to 12:00 AM 9,289 11.66% 1.24% 19,306 24.71% 1.20% -10,017 -51.88% 9:00 AM to 5:00 PM (Business Hours) 35.943 45.11% 1.46% 101 59.072 75.60% 1.41% 98 -23.130-39.15% Purpose 8.26% 1.45% Commuted 6.580 100 13.083 16.74% 1.49% 104 -6.504 -49.71% 1.79% 123 1.42% Visited a park/green space 13.222 16.59% 21,355 27.33% 99 -8.134 -38.09% Visited a commercial location 8.961 11.25% 1.17% 81 22.080 28.26% 1.12% 78 -13.119 -59.41% 1.79% Used Heavy Rail transit 0 0.00% 0.00% 5.024 6.43% 125 -5.024 -100.00% Average Index Average Index % Change Metrics Distance of observed travel (KM) 414,105 5.20 885,490 11.33 79 -53.23% 94 Time spent away from home (Minutes) 6,823,461 85.64 113 18,829,901 240.99 -63.76% Benchmark: Toronto, ON (CMA) Copyright © 2020 by Environics Analytics (EA). Source: © 2020 Environics Analytic Index Colours: <80 80-110

Highlights

- Decrease in trips
- Visits to Parks decreased overall but increased relative to other trips made In April 2020
- Note time spent away from home decreased
- People left home for shorter durations and did not travel as far.



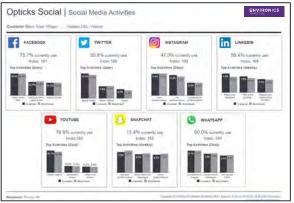
Bloor West Village – PRIZM Trend Report







Target social media



Target media







Use Case #2 Financial Institution

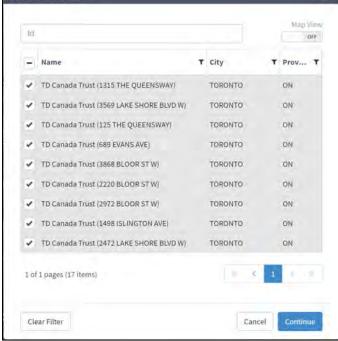


Toronto-Dominion Bank Example

Q Geofence Explorer



Selected 17 branches



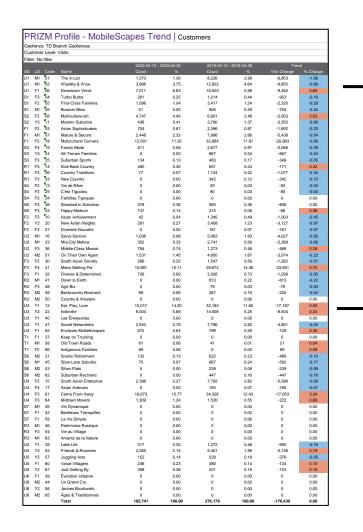


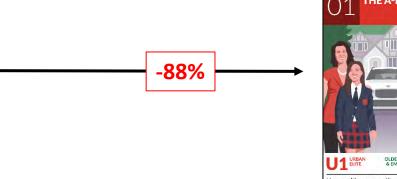


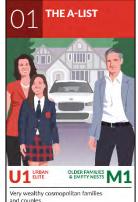


TD Bank - PRIZM Trend Report

-46%







Decreased relative share of visits

Overall visitation decreased for the branches under study. The variance between segments was dramatic. Older segments (01 The A-List) decreased in branch visitation by 88%.

Younger segments decreased visitation at a much lower rate.

Given this how would you change your engagement strategy to reflect the needs of your customers? (i.e. Pro active out reach to 01 The A-List?) knowing they do not want to visit branches in the interim?

Increased share of visits

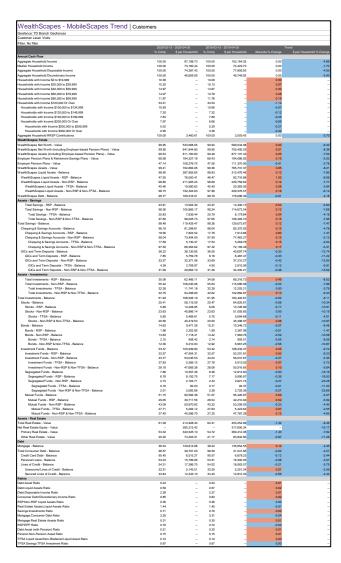


Younger, well-educated urban singles



Younger and middle-aged urban singles

TD Bank - Wealthscapes Trend Reports



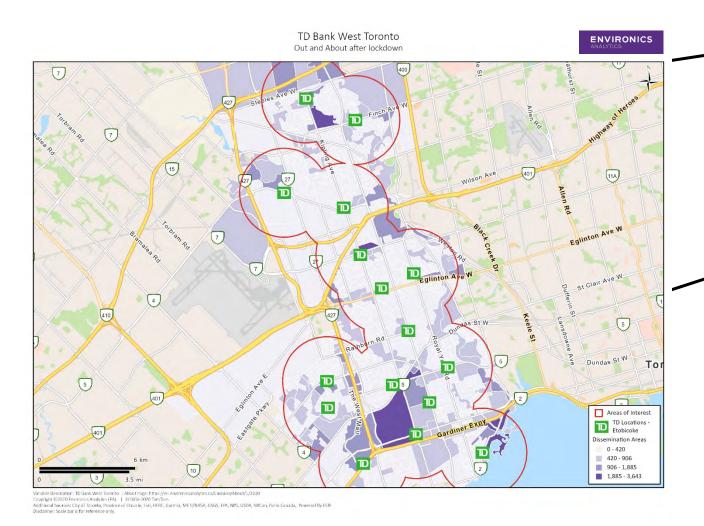
Key differences in branch visitors between 2019 and 2020

Branch visitor summary: People who visited TD branches in West Toronto between March and April of this year when compared to the same time period last year had:

- -Lower incomes
- -Had less savings
- -Had more debt
- -Had higher Debt / Asset ratios



TD Bank – Out and About



Darker areas represent neighbourhoods where more people are out and about

Lighter areas represent neighbourhoods where less people are out and about

Our clients are using this to:

- -Confirm which locations to open
- -Where to send inventory
- -Where to send sales reps
- -Where to focus on e-commerce and curbside pickup..

TD – Activity Trend Report

Out and About	Activity	Trend							ENVIR ANALYTICS	
Trade Area: TD Branches										
	April 2020					April 201	9		Char	nge
	Count	%	% Pen	Index	Count	%	% Pen	Index	Absolute	%
Basics										
Household Population 15+	418,325	100.00%	7.60%	100	413,562	100.00%	7.61%	100	4,763	1.15%
Out & About	234,633	56.09%	7.94%	105	348,414	84.25%	7.58%	100	-113,781	-32.66%
Dayparts										
12:00 AM to 6:00 AM	51,371	12.28%	8.09%	106	68,995	16.68%	8.00%	105	-17,624	-25.54%
6:00 AM to 9:00 AM	83,736	20.02%	8.20%	108	157,026	37.97%	7.65%	101	-73,290	-46.67%
9:00 AM to 12:00 PM	120,420	28.79%	8.02%	105	220,588	53.34%	7.50%	99	-100,168	-45.41%
12:00 PM to 3:00 PM	144,479	34.54%	7.99%	105	255,203	61.71%	7.52%	99	-110,724	-43.39%
3:00 PM to 6:00 PM	147,011	35.14%	7.91%	104	259,114	62.65%	7.48%	98	-112,103	-43.26%
6:00 PM to 9:00 PM	109,422	26.16%	7.96%	105	204,521	49.45%	7.37%	97	-95,099	-46.50%
9:00 PM to 12:00 AM	59,976	14.34%	8.01%	105	119,858	28.98%	7.44%	98	-59,882	-49.96%
9:00 AM to 5:00 PM (Business Hours)	195,409	46.71%	7.96%	105	315,728	76.34%	7.54%	99	-120,318	-38.11%
Purpose										
Commuted	36,469	8.72%	8.02%	106	64,915	15.70%	7.38%	97	-28,446	-43.82%
Visited a park/green space	73,030	17.46%	9.87%	130	129,183	31.24%	8.57%	113	-56,154	-43.47%
Visited a commercial location	54,058	12.92%	7.06%	93	134,040	32.41%	6.78%	89	-79,982	-59.67%
Used Heavy Rail transit	0	0.00%	0.00%		20,864	5.04%	7.45%	98	-20,864	-100.00%
		Average		Index		Average		Index		% Change
Metrics										
Distance of observed travel (KM)	2,243,712	5.36		114	5,529,697	13.37		93		-59.42%
Time spent away from home (Minutes)	34,759,160	83.09		110	105,760,238	255.73		100		-67.13%
Benchmark: Toronto, ON (CMA)						Copyright ©20:	20 by Environics A	nalytics (EA). So	urce: ©2020 Env	ironics Analytics
						Inc	dex Colours:	<80	80-110	>110

TD – Activity Trend Branch Ranking Report

	2020	2019			
Branch	Total Population	Count	% Pen	Count	% Pen
1315 The Queensway	15,277	10,931	71.55	14,242	93.23
689 Evans Avenue	17,391	10,439	60.03	14,083	80.98
1048 Islington Avenue	41,617	23,631	56.78	32,640	78.43
1440 Royal York Road	45,475	25,536	56.15	38,943	85.64
3868 Bloor Street West	43,381	23,952	55.21	34,329	79.13
1735 Kipling Avenue	35,026	19,325	55.17	30,770	87.85
666 Burnhamthorpe Road	47,187	26,014	55.13	38,620	81.84
2472 Lakeshore Road	38,739	20,994	54.19	31,674	81.76
250 Wincott Drive	42,967	23,130	53.83	35,912	83.58
4335 Bloor Street West	45,839	24,629	53.73	37,340	81.46
2574 Finch Ave West	41,798	21,810	52.18	34,123	81.64
2972 Bloor Street West	51,788	26,962	52.06	39,729	76.71
1498 Islington Ave	33,948	17,440	51.37	26,243	77.30
2038 Kipling Avenue	23,247	11,475	49.36	17,954	77.23
2700 Kipling Avenue	41,541	19,947	48.02	33,508	80.66
500 Rexdale Blvd	21,389	9,963	46.58	16,723	78.18

TD – Activity Trend Branch Ranking Report

1315 The Queensway 689 Evans Avenue 1048 Islington Avenue 1440 Royal York Road 3868 Bloor Street West 1735 Kipling Avenue 666 Burnhamthorpe Road 2472 Lakeshore Road 250 Wincott Drive 4335 Bloor Street West 2574 Finch Ave West 2972 Bloor Street West 1498 Islington Ave 2038 Kipling Avenue 2700 Kipling Avenue 500 Rexdale Blvd

720/	029/
72%	93%
60%	81%
57%	78%
56%	86%
55%	79%
55%	88%
55%	82%
54%	82%
54%	84%
54%	81%
52%	82%
52%	77%
51%	77%
49%	77%
48%	81%
47%	78%

2019 % Pen

■ 2020 % Pen

The trade area around this branch historically had 93% of its trade area defined as 'Out and About'. During the same time this year only 72% of its trade area is active.

The delta in activity highlights how much consumer movement has changed and specifically how much it is impacting local areas. True recovery in this regard would be attained for branches when the 2020 rates match 2019 historical norms (93%).

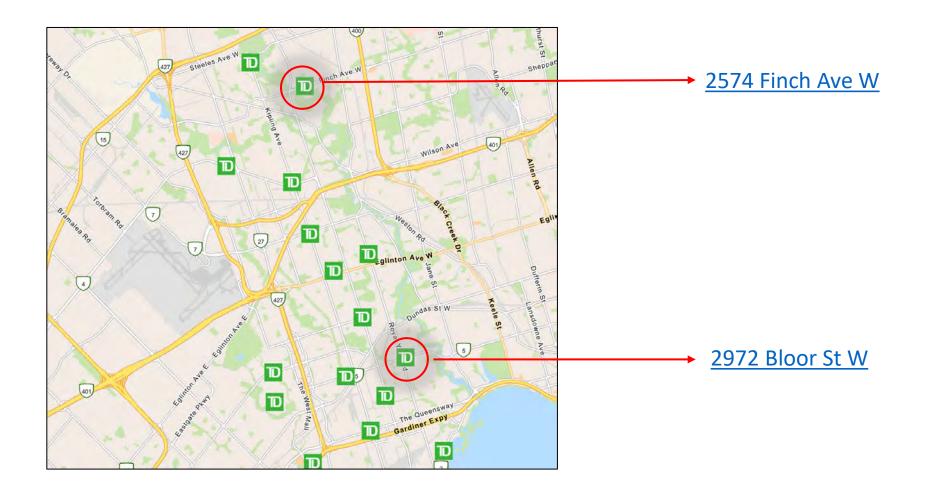
Our clients are using this information to create store or branch specific recovery metrics to inform when locations should open, where to send inventory and when to focus on e-commerce and curbside pickup. These reports can be updated on a weekly basis.



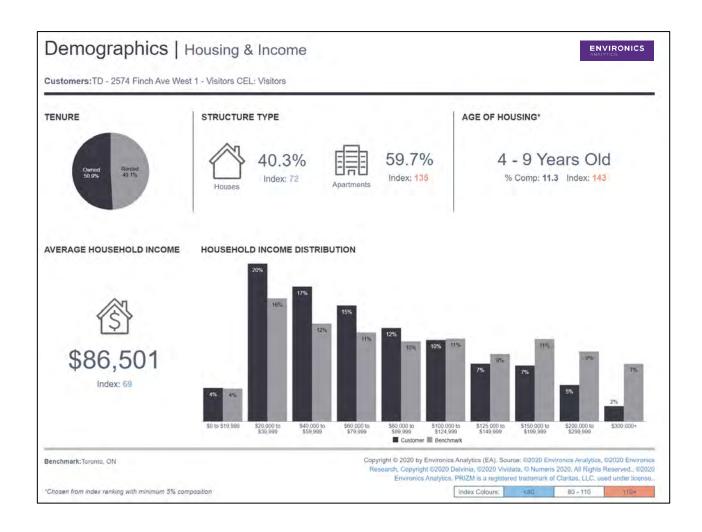
Comparison Between Two Locations



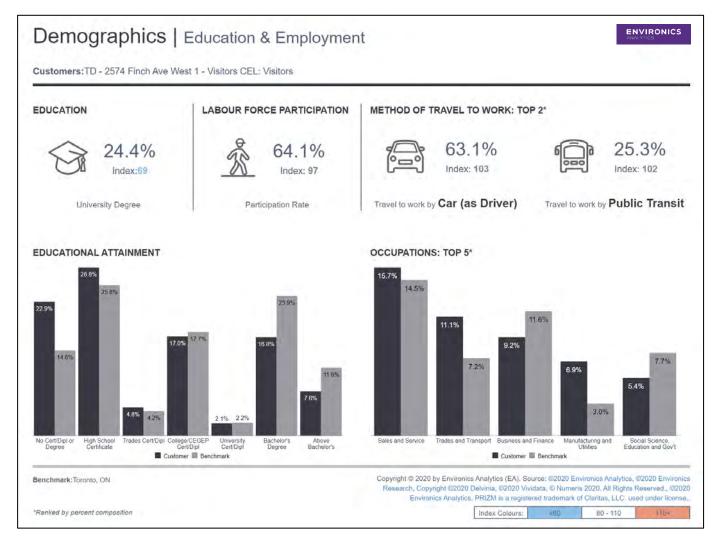
Comparing Two Locations



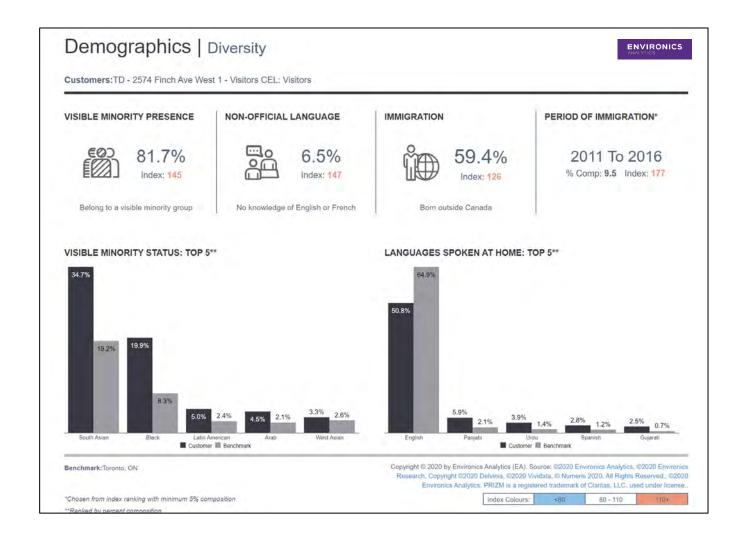
TD Bank – 2574 Finch Ave W – Overview



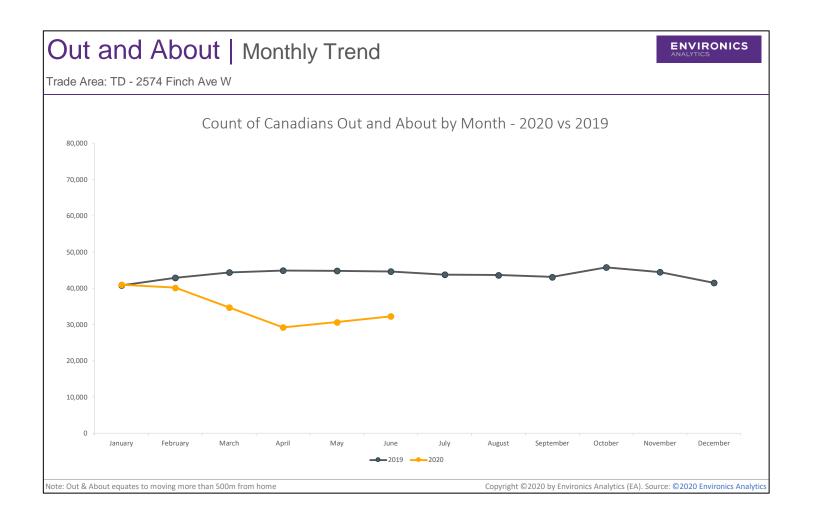
TD Bank – 2574 Finch Ave W – Overview



TD Bank – 2574 Finch Ave W – Overview



TD Bank – 2574 Finch Ave W – Activity Trend





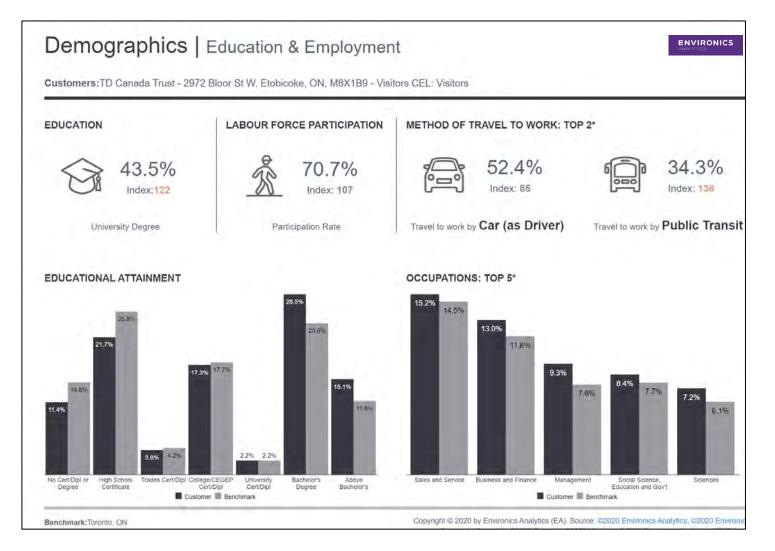
TD Bank – 2574 Finch Ave W – Activity Trend

Out and About Activity Trend									ENVIRONICS ANALYTICS	
Trade Area: TD - 2574 Finch Ave W										
		April 2020				April 2019			Change	
	Count	%	% Pen	Index	Count	%	% Pen	Index	Absolute	%
Basics										
Household Population 15+	53,742	100.00%	0.98%	100	54,047	100.00%	0.99%	100	-305	-0.56%
Out & About	29,233	54.39%	0.99%	101	44,906	83.09%	0.98%	98	-15,673	-34.90%
Dayparts			_							
12:00 AM to 6:00 AM	7,792	14.50%	1.23%	126	10,752	19.89%	1.25%	125	-2,960	-27.53%
6:00 AM to 9:00 AM	11,181	20.80%	1.09%	112	20,176	37.33%	0.98%	99	-8,996	-44.59%
9:00 AM to 12:00 PM	15,077	28.05%	1.00%	103	27,707	51.26%	0.94%	95	-12,630	-45.58%
12:00 PM to 3:00 PM	18,315	34.08%	1.01%	104	32,146	59.48%	0.95%	95	-13,831	-43.03%
3:00 PM to 6:00 PM	18,831	35.04%	1.01%	104	33,099	61.24%	0.96%	96	-14,268	-43.11%
6:00 PM to 9:00 PM	14,987	27.89%	1.09%	112	26,844	49.67%	0.97%	97	-11,857	-44.17%
9:00 PM to 12:00 AM	9,292	17.29%	1.24%	127	17,310	32.03%	1.07%	108	-8,018	-46.32%
9:00 AM to 5:00 PM (Business Hours)	24,144	44.93%	0.98%	101	40,246	74.47%	0.96%	97	-16,103	-40.01%
Purpose										
Commuted	4,605	8.57%	1.01%	104	8,002	14.81%	0.91%	92	-3,397	-42.45%
Visited a park/green space	9,385	17.46%	1.27%	130	17,635	32.63%	1.17%	118	-8,250	-46.78%
Visited a commercial location	6,912	12.86%	0.90%	92	17,988	33.28%	0.91%	92	-11,076	-61.57%
Used Heavy Rail transit	0	0.00%	0.00%		1,405	2.60%	0.50%	50	-1,405	-100.00%
		Average		Index		Average		Index		% Change
Metrics										
Distance of observed travel (KM)	181,357	3.37		72	619,664	11.47		80		-70.73%
Time spent away from home (Minutes)	4,201,013	78.17		103	13,808,135	255.48		100		-69.58%
Benchmark: Toronto, ON (CMA)		Copyright ©2020 by Environics Analytics (EA). Source: ©2020 Environ								
						Inc	dex Colours:	<80	80-110	>110

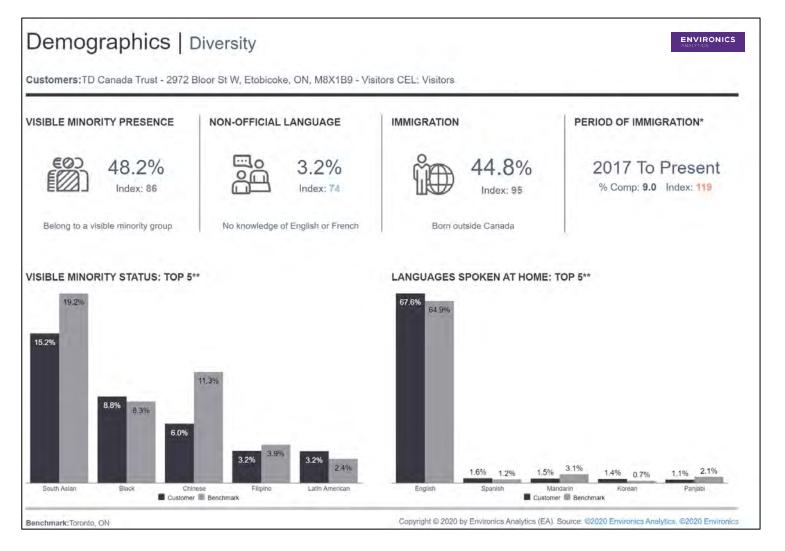
TD Bank – 2972 Bloor Street West



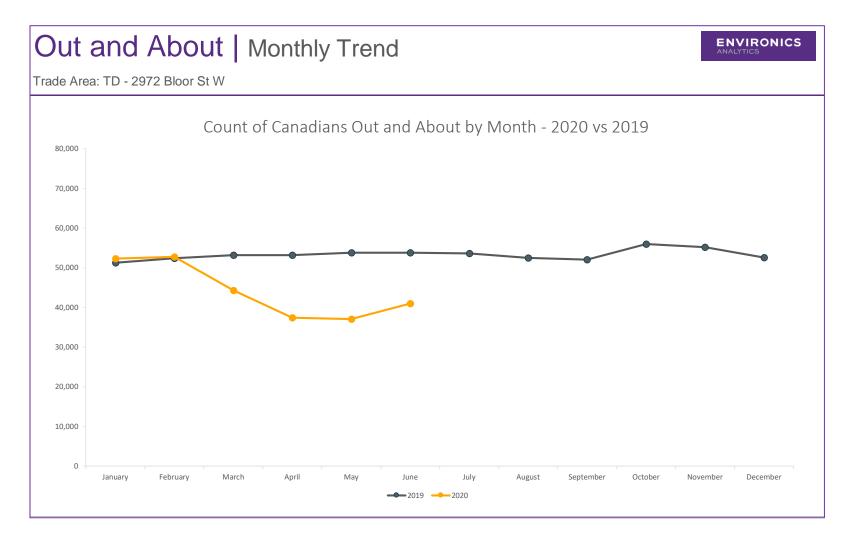
TD Bank – 2972 Bloor Street West



TD Bank – 2972 Bloor Street West



TD Bank – 2972 Bloor Street West – Activity Trend

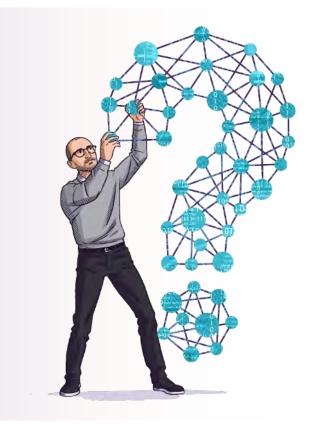




TD Bank – 2972 Bloor Street West – Activity Trend

Out and About Activity Trend								ENVIRONICS ANALYTICS		
Trade Area: TD - 2972 Bloor St W										
		April 2020				April 2019			Char	
Paris	Count	%	% Pen	Index	Count	%	% Pen	Index	Absolute	%
Basics	C4 007	400.000/	4.400/	400	C2 000	400.000/	4.400/	400	4.405	4.700/
Household Population 15+	64,997	100.00%	1.18%	100	63,892	100.00%	1.18%	100	1,105	1.73%
Out & About	37,443	57.61%	1.27%	107	53,201	83.27%	1.16%	99	-15,758	-29.62%
Dayparts 12:00 AM to 6:00 AM	6 905	10.47%	1.07%	91	7 600	12.02%	0.89%	76	-878	-11.43%
	6,805				7,682					
6:00 AM to 9:00 AM	12,643	19.45%	1.24%	105	24,243	37.94%	1.18% 1.18%	100	-11,601	-47.85%
9:00 AM to 12:00 PM	18,962	29.17%	1.26%	107	34,663	54.25%		100	-15,702	-45.30%
12:00 PM to 3:00 PM	22,568	34.72%	1.25%	106	39,154	61.28%	1.15%	98	-16,586	-42.36%
3:00 PM to 6:00 PM	23,324	35.88%	1.25%	106	39,926	62.49%	1.15%	98	-16,602	-41.58%
6:00 PM to 9:00 PM	16,747	25.77%	1.22%	103	30,686	48.03%	1.11%	94	-13,939	-45.43%
9:00 PM to 12:00 AM	7,864	12.10%	1.05%	89	16,180	25.32%	1.00%	85	-8,316	-51.39%
9:00 AM to 5:00 PM (Business Hours)	31,473	48.42%	1.28%	109	48,802	76.38%	1.17%	99	-17,330	-35.51%
Purpose										
Commuted	5,093	7.84%	1.12%	95	9,430	14.76%	1.07%	91	-4,337	-45.99%
Visited a park/green space	12,208	18.78%	1.65%	140	20,202	31.62%	1.34%	114	-7,995	-39.57%
Visited a commercial location	7,486	11.52%	0.98%	83	19,678	30.80%	1.00%	85	-12,192	-61.96%
Used Heavy Rail transit	0	0.00%	0.00%		4,335	6.78%	1.55%	132	-4,335	-100.00%
		Average		Index		Average		Index		% Change
Metrics										
Distance of observed travel (KM)	415,647	6.39		136	877,375	13.73		96		-52.63%
Time spent away from home (Minutes)	5,865,313	90.24		119	15,706,999	245.84		96		-62.66%
Benchmark: Toronto, ON (CMA)						Copyright © 202	20 by Environics Ar	nalytics (EA). Sou	ırce: ©2020 Envi	ironics Analytic
						Ind	lex Colours:	<80	80-110	>110

QUESTIONS?





Evan Wood



Peter Miron



Casey Price

