

Fires Start in More Ways Than One:

Using Data to Reduce Community Risk Through Targeted Fire Safety Campaigns

Michelle Stronach

Division Chief

Data Analytics &
Decision Support

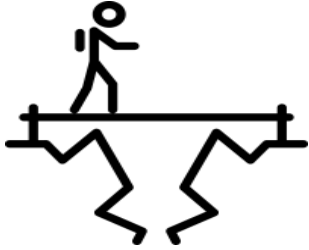


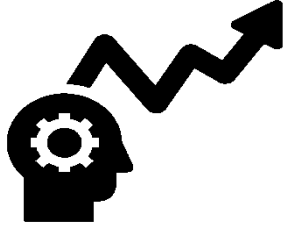
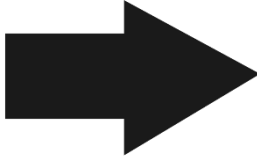
Marla Friebe

Division Chief

Public Education &
Professional Standards



What we are going to talk about

Our Challenge	Our solution	Results	What we learned	What's next
 <p>Need to change the process</p>	 <p>Build data capabilities</p>	 <p>Fire safety campaign targeted based on risk</p>	 <p>Right approach but need bigger scale</p>	 <p>Measure, evaluate, and build on successes</p>

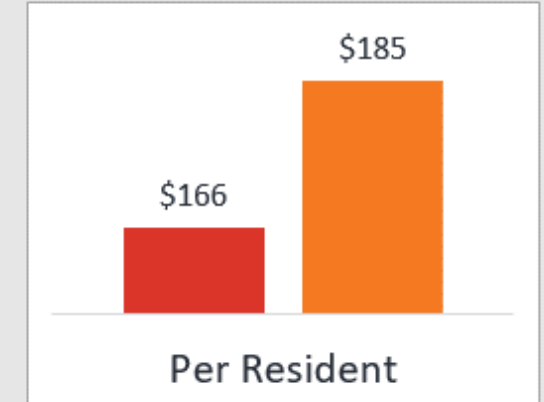
Toronto Fire Services: Dedicated to protecting life, property, and the environment through education, prevention and emergency response.



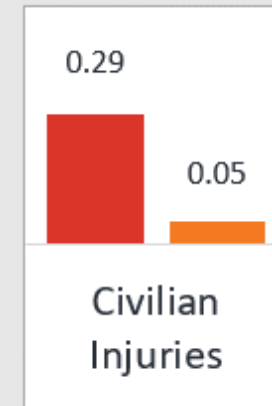
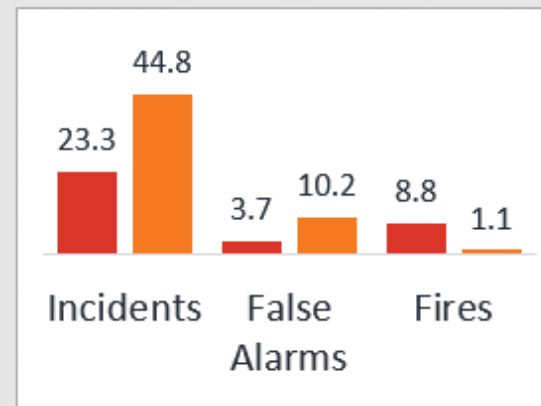
Past vs. now

	1973	2018
Cost of TFD/TFS	\$80,228,744	\$547,692,017
Staff	1,321	3,214
Population	694,600	2,956,024
Incident Alarms	16,150	133,404
Fires	6,133	3,355
Fire Loss	\$15,128,282	\$83,644,943
Firefighters injured	475	29
Civilians injured	199	140

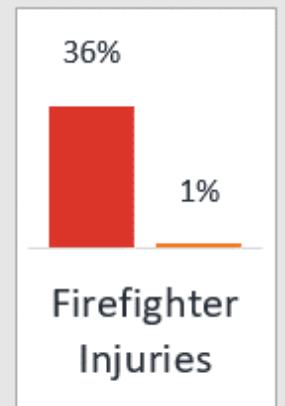
Cost Ratios



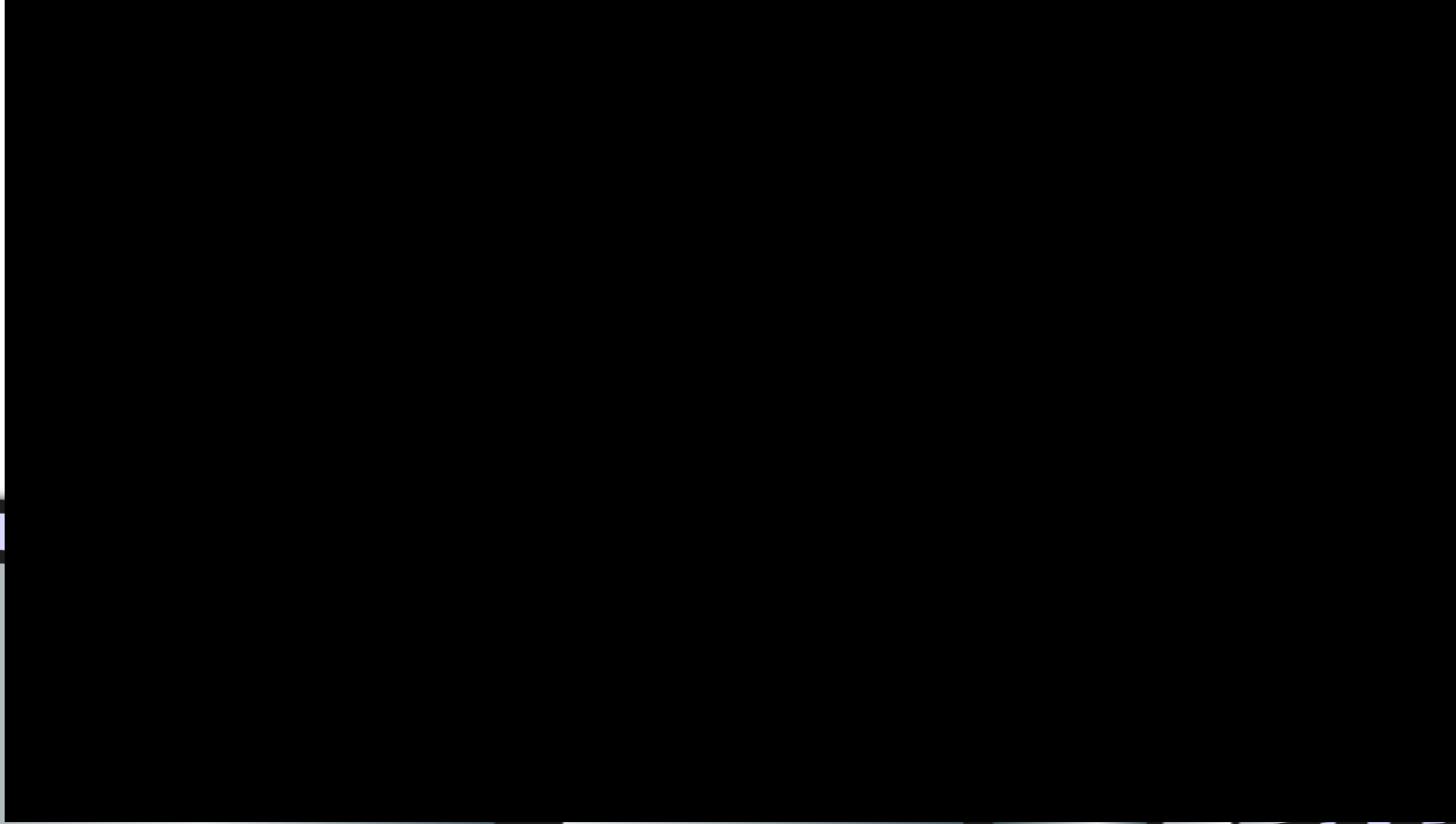
Outcome per 1,000 Population



Per Staff



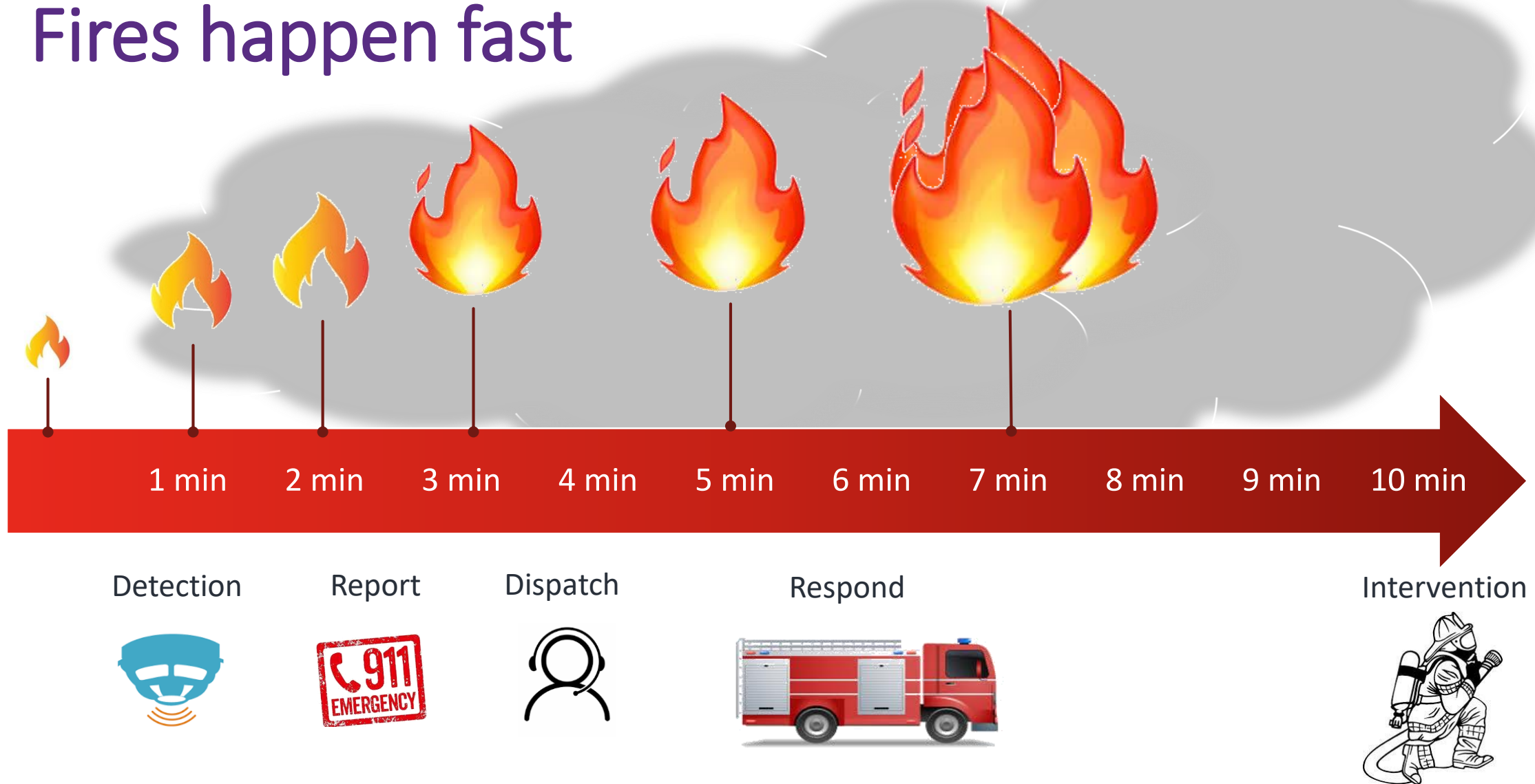
Message from the Chief



Central business district before 1974 and after 2014



Fires happen fast



Traditional methods not good enough

Not necessarily reaching
those most at risk

AND

Gets lost with
information overload



Our challenge

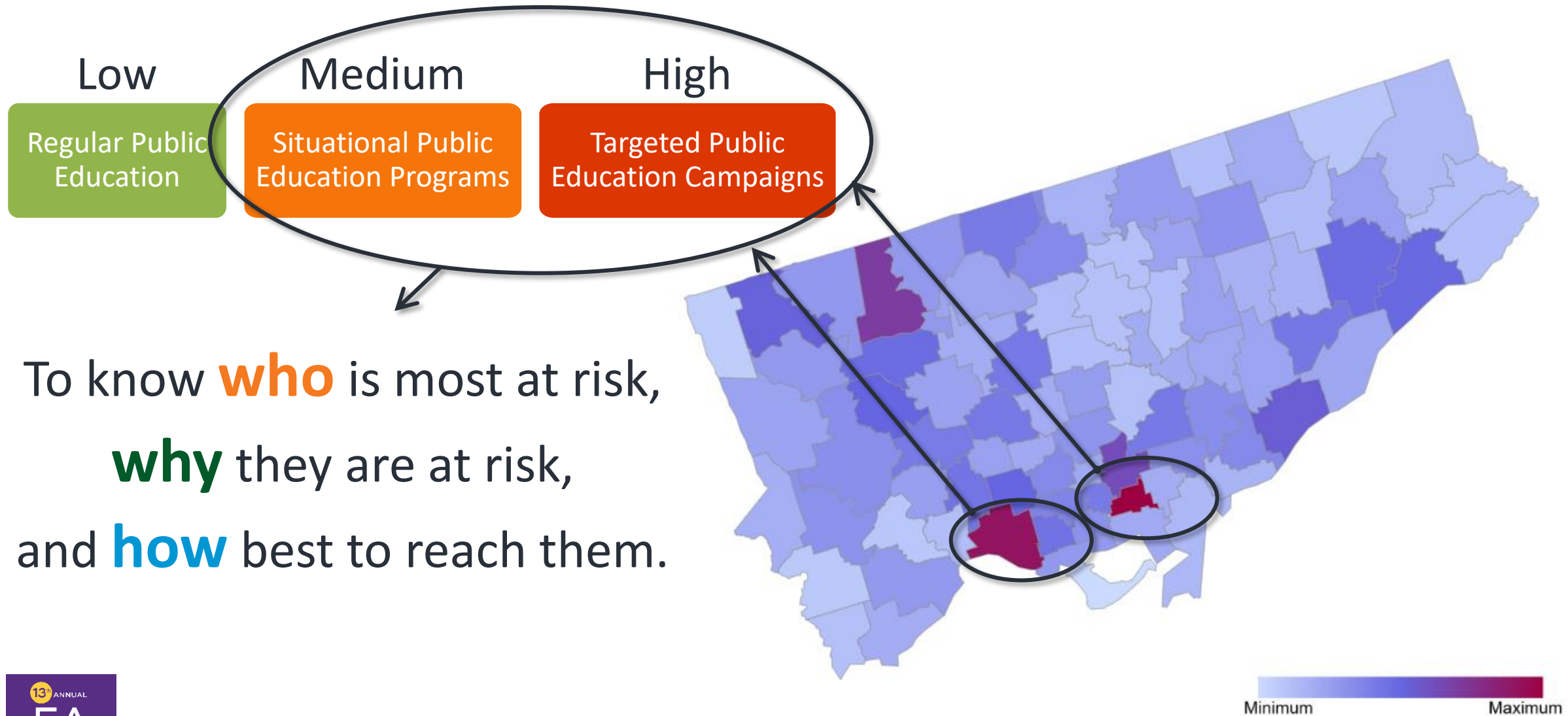


Our solution



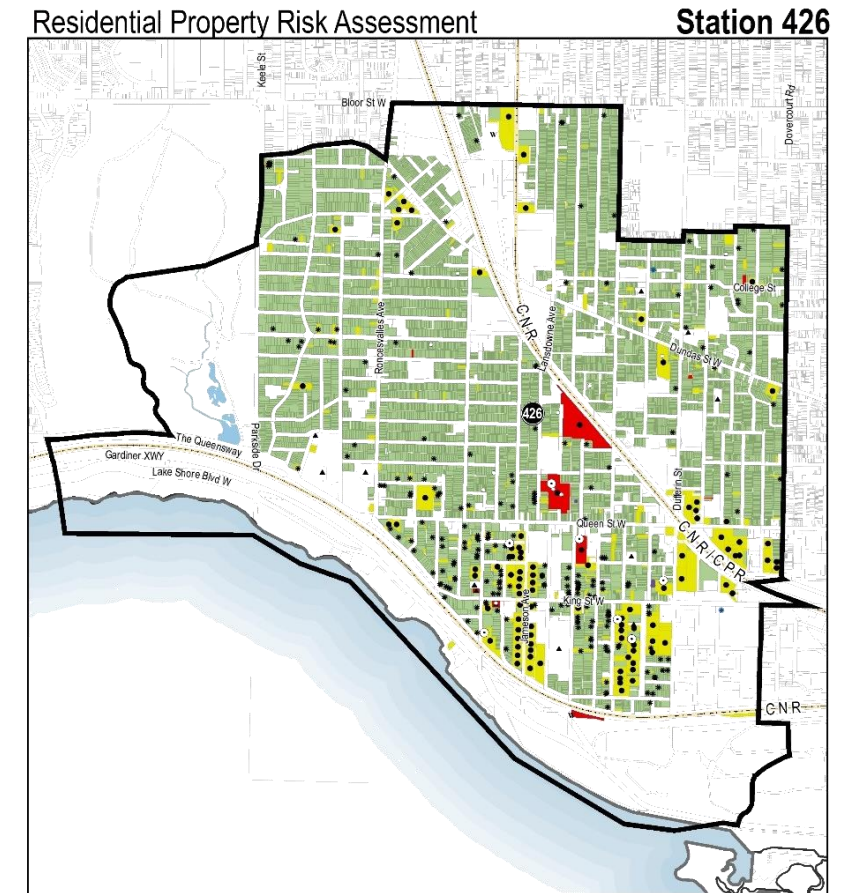
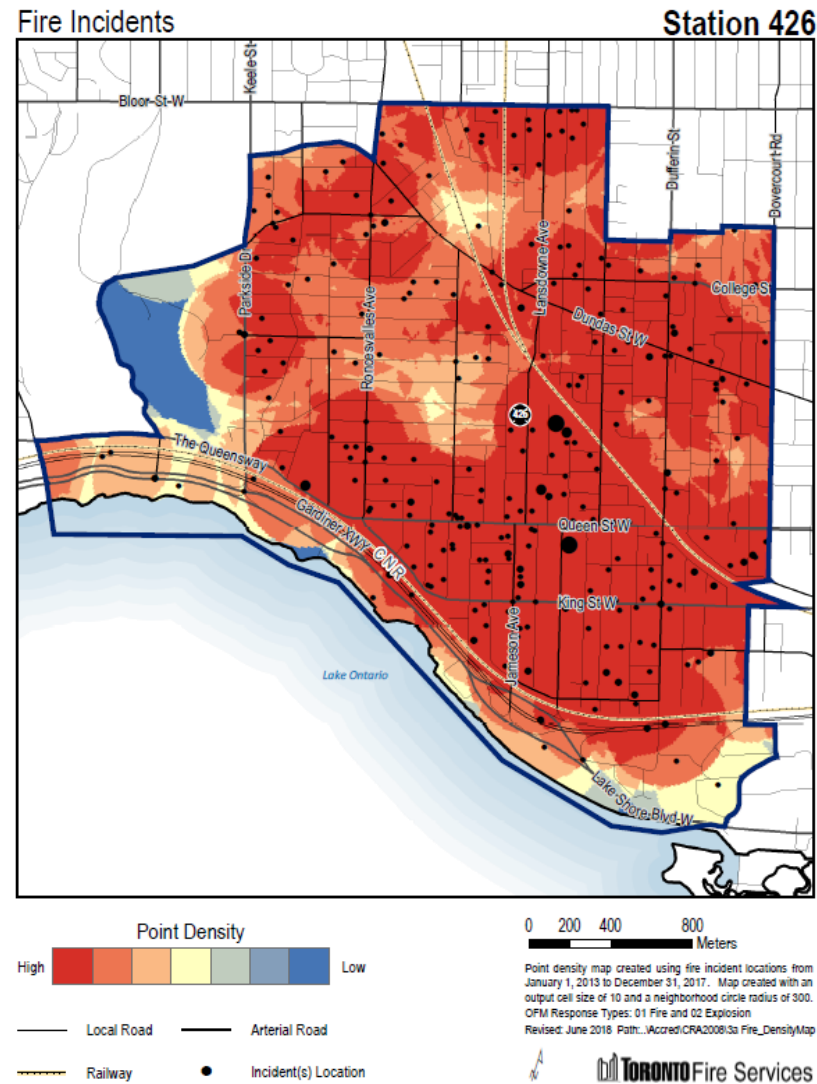
1. **Fire incident data** to identify communities most at risk
2. **Analysis** to determine the leading ignition source
3. **Environics Analytics PRIZM** to match profiles to addresses
4. **Advertising agency** to create impactful messages
5. **Measure results**

Public education for high risk communities



2018 Parkdale campaign

Assessing Risk



Risk Level	Res Prop Count	% Res Prop in Run Area	Area* (km ²)	% of Run Area*
Extreme	0	0%	0	0%
High	2	0%	0.03	0.9%
Medium	313	2.9%	0.34	11.2%
Low	10634	97%	2.66	87.9%
Total	10958		3.02	

* Area does not include public corridor (e.g. roadways, railways etc.).

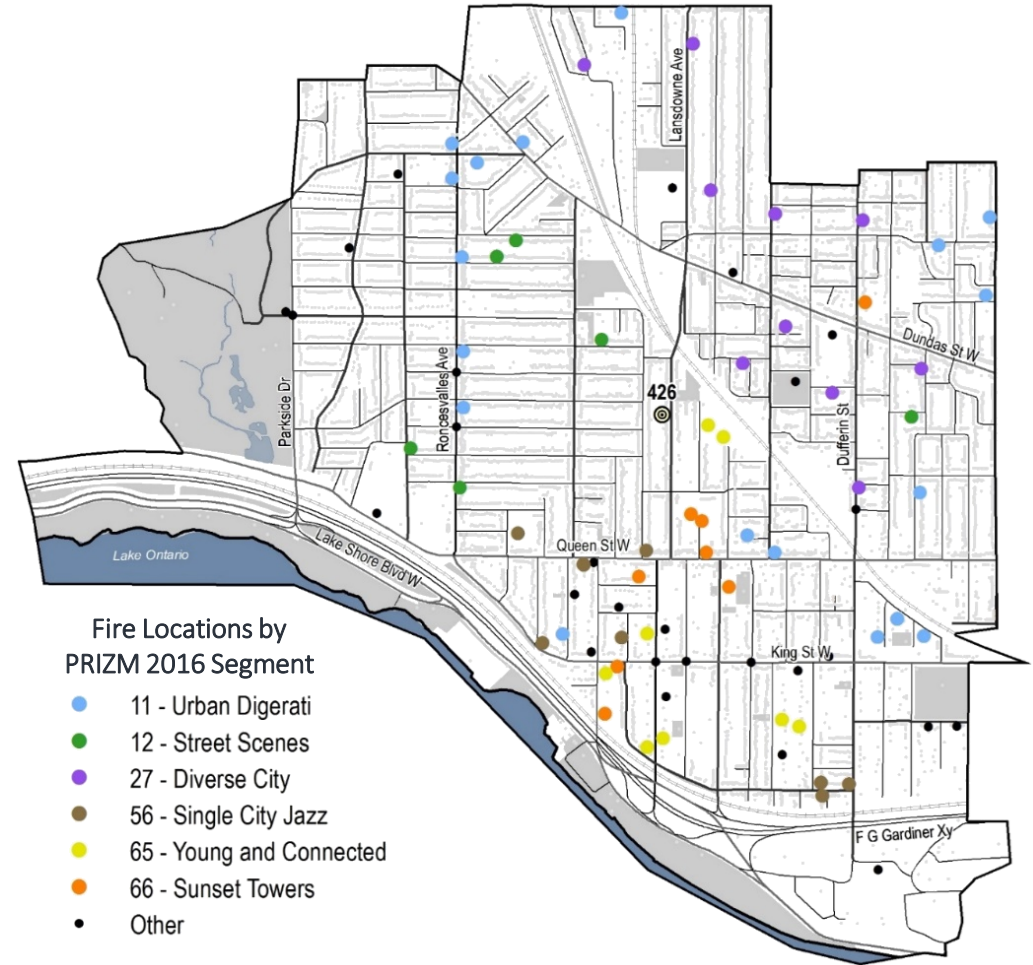
Residential Property Risk Hazards

High Medium Low

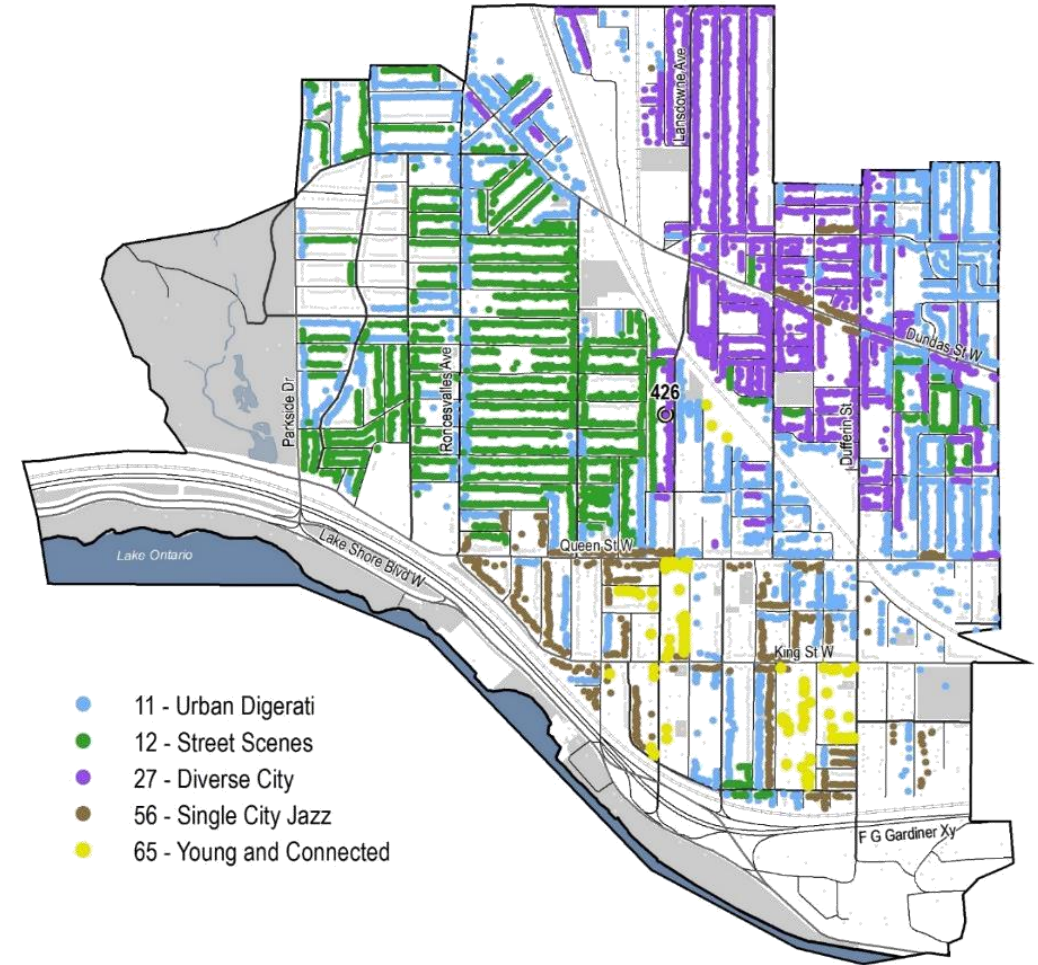
Types of Hazards:

- High Rise
- TCHC High Rise
- TCHC Mid/Low Rise
- TCHC Townhouse
- Permitted Rooming House
- Rooming House
- Chemical Hazard
- Distance from Public Hydrant

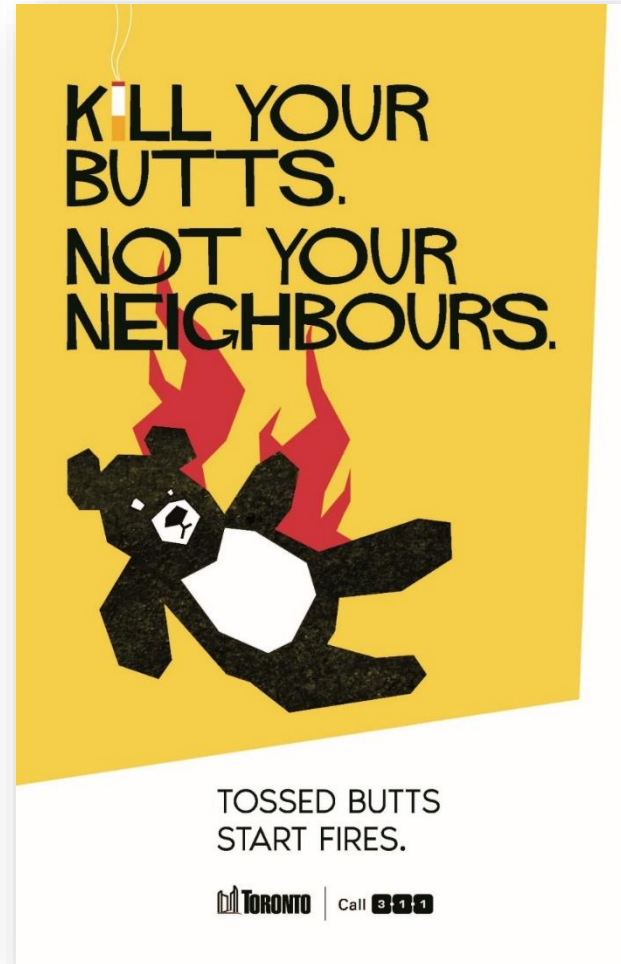
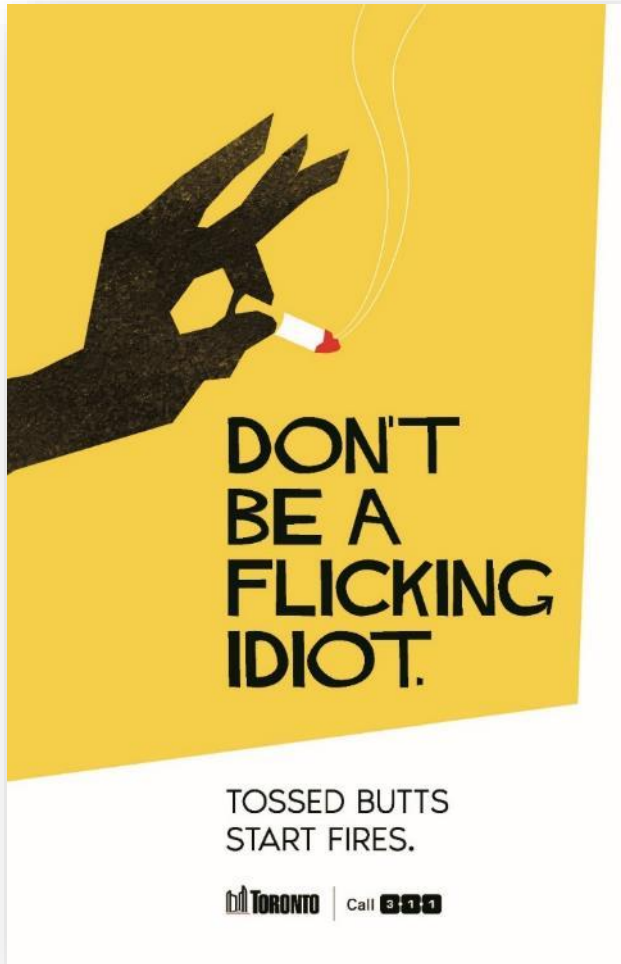
Parkdale – linking personas to fire incidents



Parkdale – who else may be at risk?

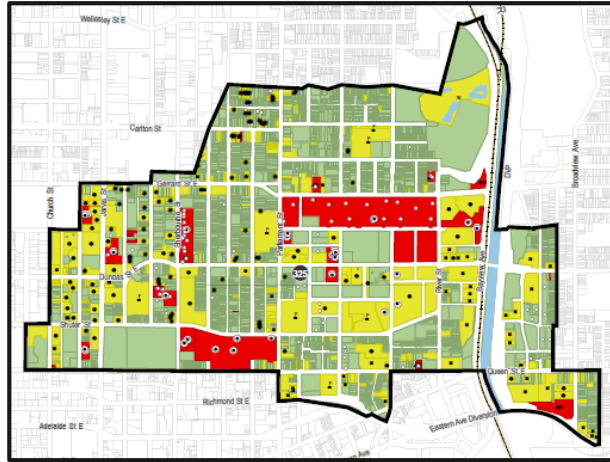


Parkdale campaign message and media



- Posters & tip cards
- Social media
- Presentations
- Door-to-door

2019 Regent Park campaign



Young Singles



Large Families and
Mature Singles



Younger Larger
Families



TCHC Urban
Dwellers



High-rise

44%

26%

18%

12%



Other

45%

24%

9%

9%



Civilian Injuries

19%

34%

19%

13%



Actual Fires

18%

31%

14%

17%



Precursor Fires

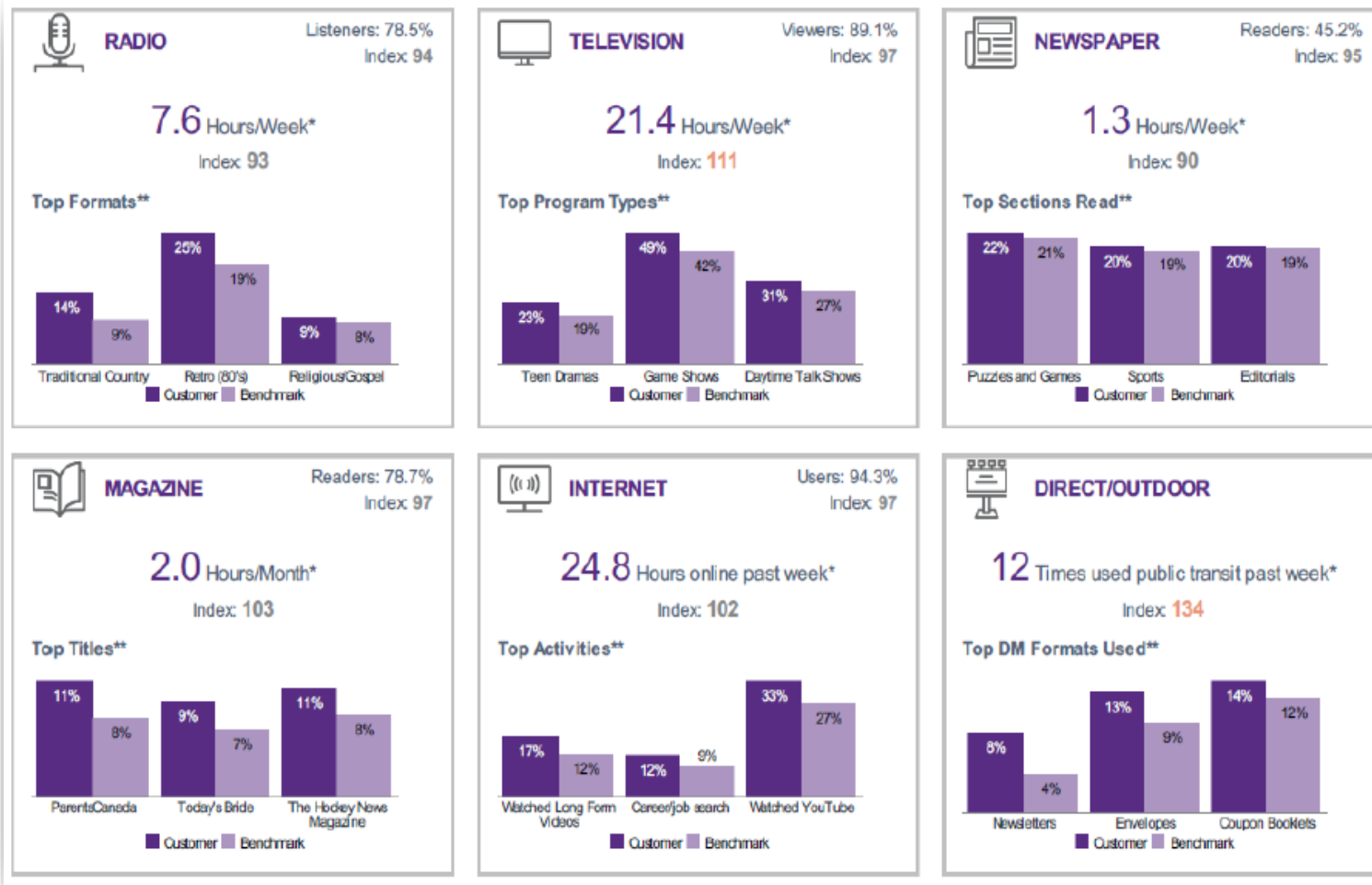
21%

23%

16%

18%

Regent Park target persona: Young Singles



- 40% of homes are single-parent
- 90% live in apartments
- Very high diversity
- Public transit used at above average rates
- Media: direct/outdoor, television, internet

2019 Regent Park campaign



- Coordinated media release
- Large murals on two buildings
- Posters and tip cards
- Social media
- Presentations & door-to-door

Results so far



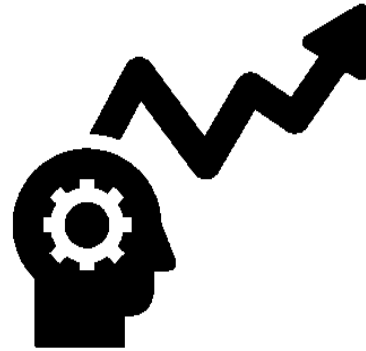
Parkdale: Don't be a Flicking Idiot

- Media attention for uniqueness
- No noticeable trend yet

Regent Park: Fires happen fast

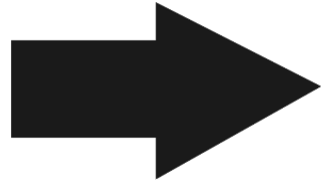
- Good social media response
- Increased impressions
- Too soon to measure outcomes

What we learned



- Direct marketing improves the chance a message is heard
- We can't force people to change; we can drive home the message
- Size of target market not big enough
- Need more ways of measuring behavioural change

What's next



Parkdale

- Phase II medial launch



Regent Park

- Continue to measure impressions & behavioural change



In General

- Build case to expand geographic area without diluting information delivery

Questions?

Michelle Stronach

Division Chief

Data Analytics &
Decision Support



Marla Friebe

Division Chief

Public Education &
Professional Standards