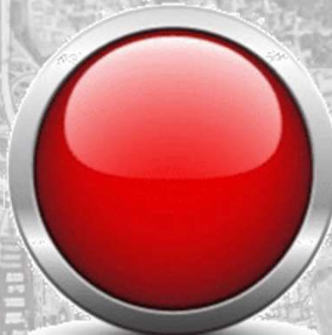


# PUBLIC ALERTING

AN UPDATE...



# NS<sup>EM</sup>

NORTH SHORE EMERGENCY MANAGEMENT

Montrose Park

west vancover

city  
of north  
vancouver

DISTRICT OF  
NORTH  
VANCOUVER

Confederation  
Park  
Off-Leash  
Trail

Scenic Park

New Brighton  
Park

Keith  
Lynn Park

River Park

Capilano  
University

McCartney  
Creek Park

INMOUR

Pools Park

WINDSOR PARK

Maplewood

Maplewood Farm

Maplewood  
Flats  
Conservation  
Area

New Brighton  
Park

## ALERTING NEEDS

Based on the community profile & HRVA indicate likely hazards and uses for public notification:

- **North Shore wide:** Amber/Silver Alerts\*; Weather Warnings; Transported Dangerous Goods
- **Maplewood area:** Industrial release of dangerous goods;
- **Other North Shore:** Dam Accidents; Interface Fires, Other imminent threats (police incident, slope failure, etc)



\*Most used



## HOW PEOPLE RECEIVE & PROCESS EMERGENCY ALERTS

The Protective Action Decision Model (PADM): a model to understand how people respond to external alerts and information (Lindell and Perry 2004; Kuligowski 2011).

**PRE-DEC\_1:** the individual must perceive or receive the cue(s);

e.g., The siren must be heard.

**PRE-DEC\_2:** the individual must pay attention to the cue(s);

i.e., given that it is possible for the siren to be heard, the occupant actually takes note of the sound.

**PRE-DEC\_3:** the individual must comprehend the cue(s) and the information that is being conveyed;

i.e., given that the signal is noted, that the meaning is understood.

**DEC\_1:** the individual must feel that the incident suggested by the cues is a credible threat.

**DEC\_2:** the individual must personalize the threat

i.e., feel that the incident is a threat to them and feel that protective action is required

**DEC\_3:** the individual searches for what this action might be and establishes options.

**DEC\_4:** the options identified are assessed (given the information available) and a final action selected.

**DEC\_5:** the individual determines whether the protective action needs to be performed immediately.

# HOW PEOPLE RESPOND TO EMERGENCY ALERTS

At this stage, the individual engages in a decision-making process to identify

- 1) what can be done to achieve protection, and
- 2) the best available method for achieving protection. This consists of a search for protective actions, and the outcome of this stage is a set of possible protective actions from which to choose. After establishing at least one protective action option, an individual engages in protective action assessment. This involves assessment of the potential option(s), evaluating the option(s) in comparison with taking no action and continuing with normal activities, and then selecting the best method of protective action, if any



## SIRENS: PUBLIC COMPREHENSION

Research shows that there are limitations associated with siren systems that can inhibit the various stages of the PADM, leading to a delayed or incomplete response to the emergency.

In reality, sirens are designed to alert people outdoors, and often times cannot be heard inside (Stokoe 2016; Kuligowski et al. 2014)\*

siren usage, testing, education and training, and all-clear procedures widely vary...leading to the distrust and confusion among community residents surrounding emergency communications (as was seen in the 2011 Joplin, MO tornado).

In a study of Hawaii communities, residents demonstrated confusion over a tsunami alerting siren. Less than five percent of residents understood the true meaning of the siren alert.

siren systems have shown difficulty in facilitating the perception or personalization of risk (DEC\_2), the last step in the PADM process before protection actions are considered.

(Kuligowski et al., 2014)

## SIRENS: CONSTRAINTS

Siren alerts are unable to reach the hearing impaired and not are clearly understood by transient populations

Research shows that there are particular subpopulations that tend to distrust the siren system more than others. These subpopulations can include men, older adults (over 60), and people with previous disaster experience (Stokoe 2016; Paul, Stimers and Caldas 2014).

Research has also shown that, compared with other information sources and channels, sirens are often reported as less trustworthy. (Stokoe 2016)

Disregard for alerts is also known as complacency or desensitization, a case where people stop paying attention to the alerts because of their frequency, often without the occurrence of an actual emergency (Laidlaw 2001).

On the NS, there are ships whistles, industrial horns and other noises to which the average listener has tuned out industrial sounds as just more noise pollution

*“callers were asking 9-1-1 operators why the sirens were being sounded and what they should do in response. These non-emergency calls to 9-1-1 restrict callers with actual emergencies from obtaining the help they need from emergency responders”* (Fox11 News report from 2016 regarding siren tests in Brown County, WI)



## CURRENT SYSTEM

- The same product has changed companies 4 times in 8 years
- Time delay to activate and not intuitive to maintain proficiency
- Dead air before message engages; many assume solicitors
- Only reaches white pages or self-registered residents
- Doesn't extend to neighbouring jurisdictions Doesn't advise transient population
- Call backs, sometimes for weeks
- Multi-stakeholder access means ambiguity of notifying agency
- Paid for by a chemical plant under Responsible Care



## THE WISH LIST...

- Ping cell towers in affected area (voice, text)
- Also extend to landlines, social media, email, etc
- Maintain GIS or list notification options
- Local authority or hazard owner as system initiator
- Intuitive user interface
- Free or minimal cost; industry funded
- Consistent system across jurisdictions
- Consistent marketing regionally/provincially
- Immediate public recognition of call purpose





# A FEW STATS...

## Smartphone household penetration rate in Canada in 2018,

Almost all households subscribe to landline and/or mobile service **99.0%**

New Brunswick had the lowest percentage of mobile-only households **15.6%**

Quebec had the highest percentage of landline-only households **14.1%**

19.8% of Canadian households own 3 or more mobile devices **19.8%**

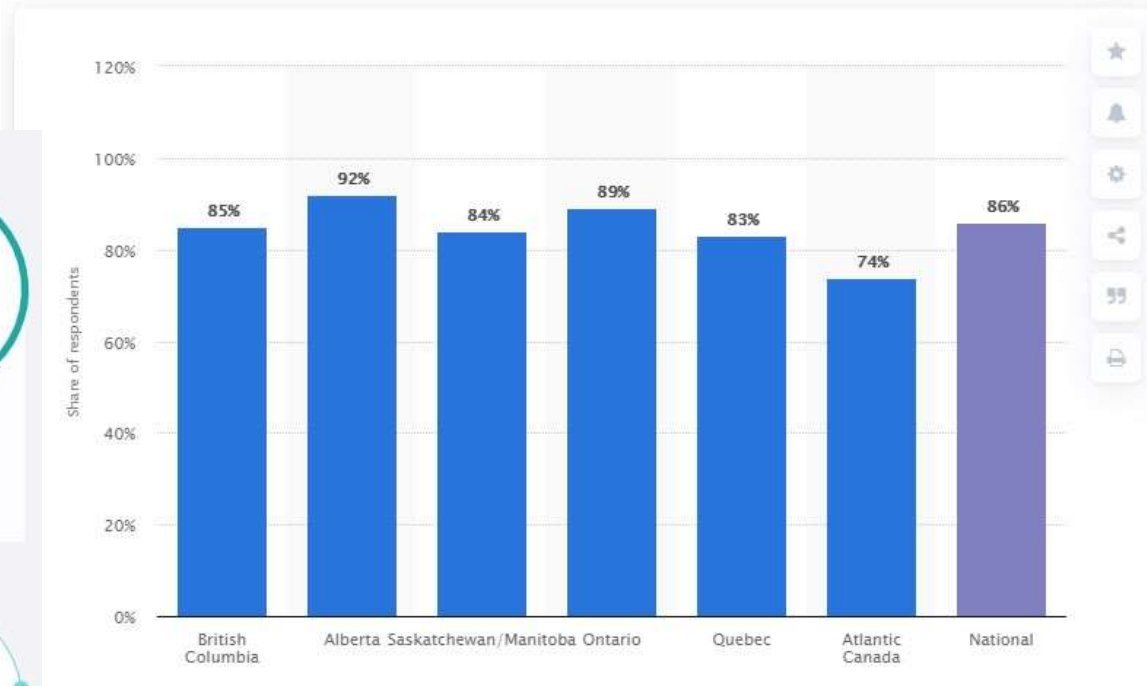
Households within the first income quintile allocate 9.1% of their annual income towards communications services **9.1%**

Landline **63%**

Mobile **90%**

Internet **89%**

Television distribution **72%**



Total, gender	
Total, Internet users aged 15 years and over	
Canada (map)	
Smartphone use and selected smartphone habits	
2018	
Percent	
Have a smartphone <sup>2</sup>	88.1 <sup>A</sup>
Check the smartphone at least every 30 minutes	45.4 <sup>A</sup>
Before going to sleep, the last thing is to check the smartphone	56.1 <sup>A</sup>
Use the smartphone while watching television	53.6 <sup>A</sup>
Use the smartphone while eating dinner	20.6 <sup>A</sup>

Symbol legend:  
A data quality: excellent

## A KEY PIECE...



The Alert Ready project has been delayed and the province is at least 1-2 years from developing Wireless Public Alerting to the community level and Alert Ready is much more than just the technology; it requires a full review of:

- Needs for notifications in general
- How does an alerting system complement other forms of notifications?
- What will be permissible (broadcast intrusive versus informational) for an alerting platform?
- Role of the province in providing training and accreditation, monitoring alerts, and potentially intervening if an alert is issued in error or a mistake is made that leads to public concern, issuing a notification on behalf of someone that is unable for any reason, etc.?
- How we manage jurisdictional overlap, as well as clearly defining the alert area (over alerting), and serve any community that chooses to not implement a system at the local level (gaps in coverage)?
- Lower Mainland has 23 LAs and several FN communities that make their own decisions on how emergencies are managed)
- province must leverage existing systems and incorporate them into the future provincial strategy

# UNDER INVESTIGATION...

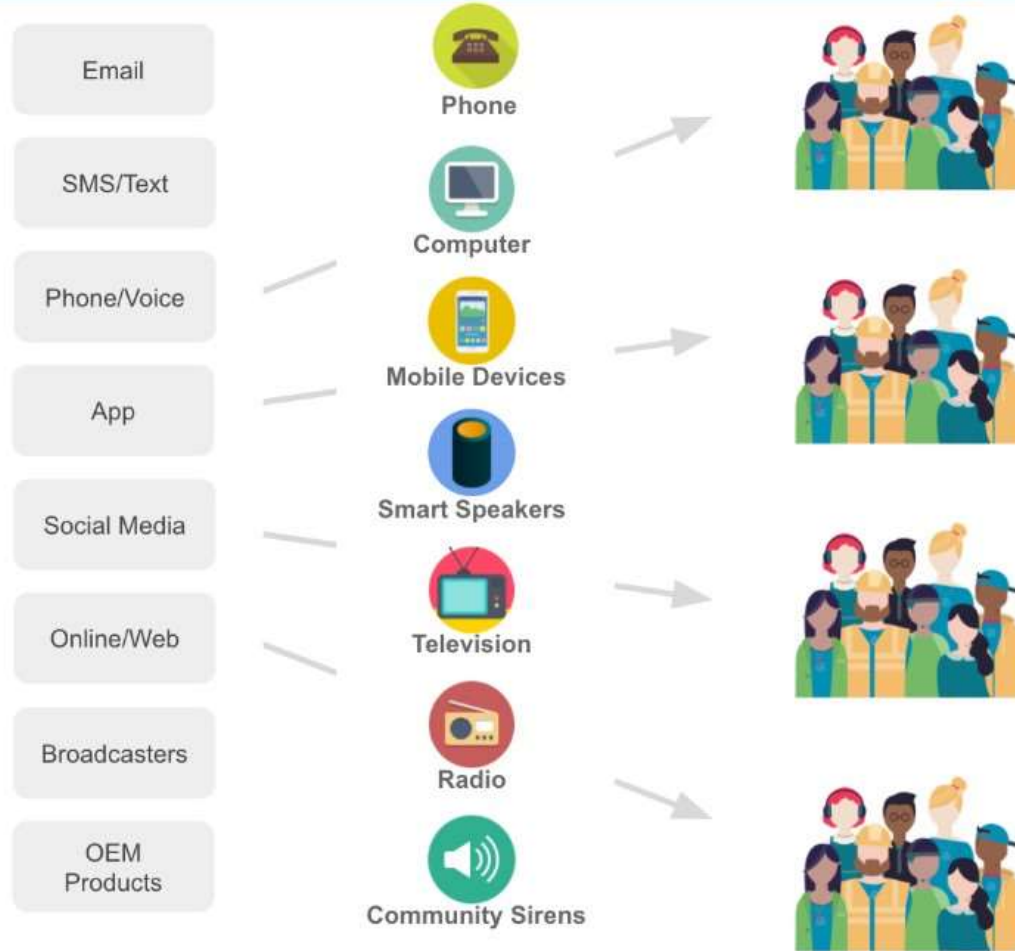
### SAVE TIME

Create notification once,  
simultaneously send to all



### NOTIFY MORE

Many ways for the public to  
receive your notifications



# SYSTEMS INTEGRATION...

