



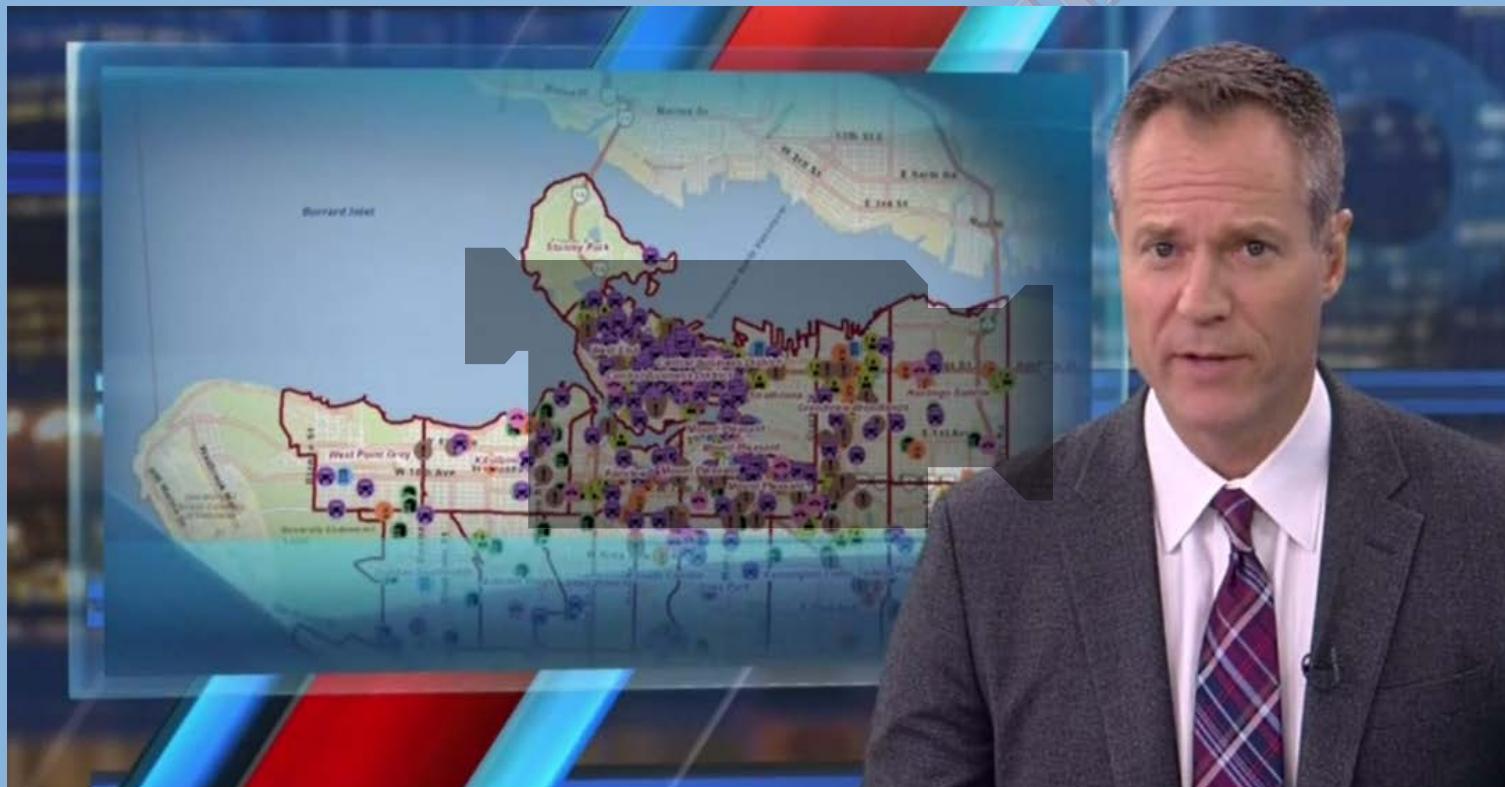
Big Data in Public Safety: Fueling AI in an Ethical & Transparent Way





GeoDASH

Public GeoDASH on Global News





GeoDASH

<http://geodash.vpd.ca/>

VANCOUVER POLICE DEPARTMENT GEO DASH CRIME MAP

Results (595)

Break and Enter Commercial
Occurrence Date/Time: 2016/08/07 08:54
Location: 10XX BURNABY ST, VAN
Neighbourhood: West End

Break and Enter Residential/Other
Occurrence Date/Time: 2016/08/04 18:00
Location: 10XX E FINCH ST, VAN
Neighbourhood: Grandview Woodland

Break and Enter Commercial
Occurrence Date/Time: 2016/08/04 08:20
Location: 17XX W 8TH AVE, VAN
Neighbourhood: West End

Break and Enter Commercial
Occurrence Date/Time: 2016/08/04 09:01
Location: 17XX W 8TH AVE, VAN
Neighbourhood: West End

Break and Enter Commercial
Occurrence Date/Time: 2016/08/09 00:02
Location: 23XX W 4TH AVE, VAN
Neighbourhood: Kitsilano

Break and Enter Commercial
Occurrence Date/Time: 2016/08/08 02:20
Location: 10XX W 4TH AVE, VAN
Neighbourhood: West Point Grey

Break and Enter Commercial
Occurrence Date/Time: 2016/08/09 23:30
Location: 40XX VICTORIA DR, VAN
Neighbourhood: Kensington-Cedar Cottage

Break and Enter Commercial
Occurrence Date/Time: 2016/08/07 15:43
Location: 10XX BURNABY ST, VAN

Displaying 1 - 50 (Total: 595)

Page 1 of 12

Show Chart

Burrard Inlet

VANCOUVER POLICE DEPARTMENT GEO DASH CRIME MAP

Results (579)

Theft from Vehicle
Occurrence Date/Time: 2016/09/07 00:00
Location: 6XX RICHARDS ST, VAN
Neighbourhood: Central Business District

Theft from Vehicle
Occurrence Date/Time: 2016/09/04 02:30
Location: 6XX W 13TH AVE, VAN
Neighbourhood: Fairview

Theft from Vehicle
Occurrence Date/Time: 2016/09/02 12:54
Location: 74XX STANLEY PARK DR, VAN
Neighbourhood: Stanley Park

Theft from Vehicle
Occurrence Date/Time: 2016/09/06 19:30
Location: 3XX BEATTY ST, VAN
Neighbourhood: Central Business District

Theft from Vehicle
Occurrence Date/Time: 2016/09/02 12:54
Location: 74XX STANLEY PARK DR, VAN
Neighbourhood: Stanley Park

Displaying 1 - 50 (Total: 579)

Page 1 of 12

Show Chart

Burrard Inlet

Occurrence Types: Break and Enter Commercial, Break and Enter Residential/Other, Homicide, Offence Against a Person, Vehicle

Date Range: Thu Aug 25 2016 - Thu Sep 08 2016

Historic Trends: Current Search Results

Occurrences

Aug 26-Sep 1 Sep 2-Sep 8

Week

■ Break and Enter Commercial ■ Break and Enter Residential/Other ■ Offence Against a Person ■ Theft from Vehicle ■ Vehicle

Occurrence Types: Break and Enter Commercial, Break and Enter Residential/Other, Homicide, Mischief, Offence Against a Person, Vehicle

Date Range: Sep 2014 - Thu Sep 08 2016

Historic Trends: 24 Month Trend Chart

Neighbourhood: All Neighbourhoods

Occurrences

Aug Jan Jun Nov Apr

Month

■ Break and Enter Commercial ■ Break and Enter Residential/Other ■ Homicide ■ Mischief ■ Offence Against a Person ■ Other Theft ■ Theft from Vehicle of Vehicle ■ Vehicle

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GeoDASH

Community Policing Centres (Public GeoDASH)



**HASTINGS SUNRISE
Community Policing CENTRE**

2620 East Hastings Street,
Vancouver BC V5K 1Z6
Phone: 604-717-3584
Email: info@hscpc.com
Office Hours:
M-F 9:30-4:30 SAT: 10-4
SUN+Holidays: Closed

REPORT A CRIME
NEWSLETTER SIGNUP
DONATE TO US

Search this site...

NEWS&EVENTS **PROGRAMS** **VOLUNTEER** **HOW TO HELP** **ABOUT US**

Browse: Home > VPD Crime Map

VPD Crime Map

GeoDASH Crime Map

Check out the VPD's new interactive mapping tool and find out where crime is happening in our city.

**VANCOUVER POLICE DEPARTMENT
GEODASH CRIME MAP**

Tweet

Neighbourhood **Type of Crime** **Hundred Block of Incident** **Date From** **Time From** **Date To** **Time To** **Total**

Grandview - Woodland	Theft from Auto	2100 E 6th Ave	2016/08/27	22:00	2016/08/29	07:00	1	
		2100 E Pender St	2016/08/27	00:01	2016/08/27	12:15	1	
		E 4th Ave / Woodland Dr	2016/08/19	16:00	2016/08/22	12:00	1	
Hastings - Sunrise	Theft from Auto Total	1900 E Hastings St	2016/08/25	01:39	2016/08/25	01:43	1	
		100 Commercial Dr	2016/08/26	17:30	2016/08/26	18:15	1	
		1800 Adanac St	2016/08/27	20:30	2016/08/28	15:00	1	
		1800 Adanac St	2016/08/28	09:00	2016/08/29	11:00	1	
		Napier St / Semlin Dr	2016/08/28	14:00	2016/08/28	23:00	1	
Boundary	Theft of Auto Total	900 Lillooet St	2016/08/29	02:44	:	5		
						1		
						1		
			E Hastings St / Renfrew St	2016/08/27	11:00	2016/08/27	20:00	1
			2500 Venables St	2016/08/24	23:00	2016/08/25	13:00	1
			100 Renfrew St	2016/08/19	22:00	2016/08/20	10:00	1
			200 Cassiar St	2016/08/25	10:00	2016/08/25	21:00	1
			300 N Nanaimo St	2016/08/24	06:02	:	1	
			300 N Nanaimo St	2016/08/28	00:35	:	1	
		Mischief Total					6	

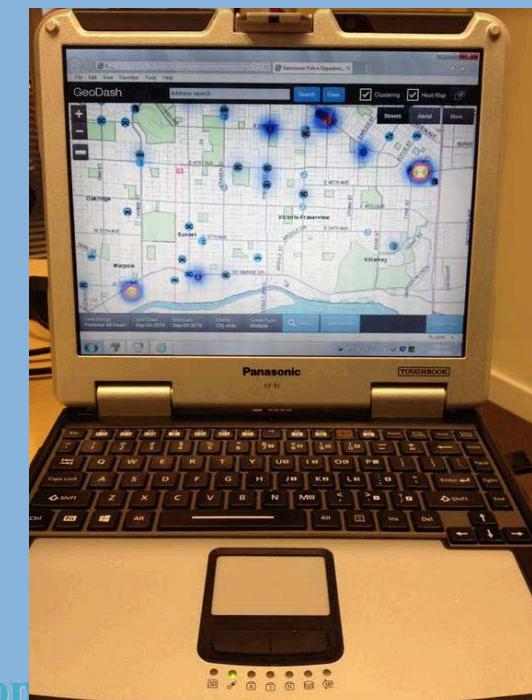
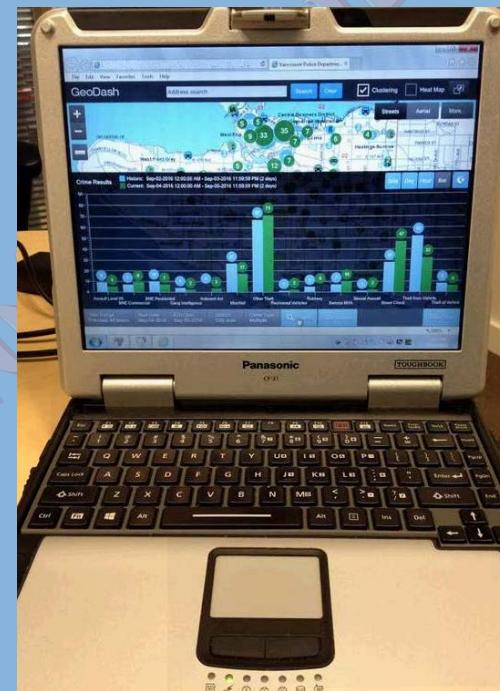
Welcome to the HSCPC, where volunteers help you deal with crime and safety concerns, clean up trash and unwanted graffiti, promote the safety of young and old, and lead the way toward a better Hastings Sunrise for all.





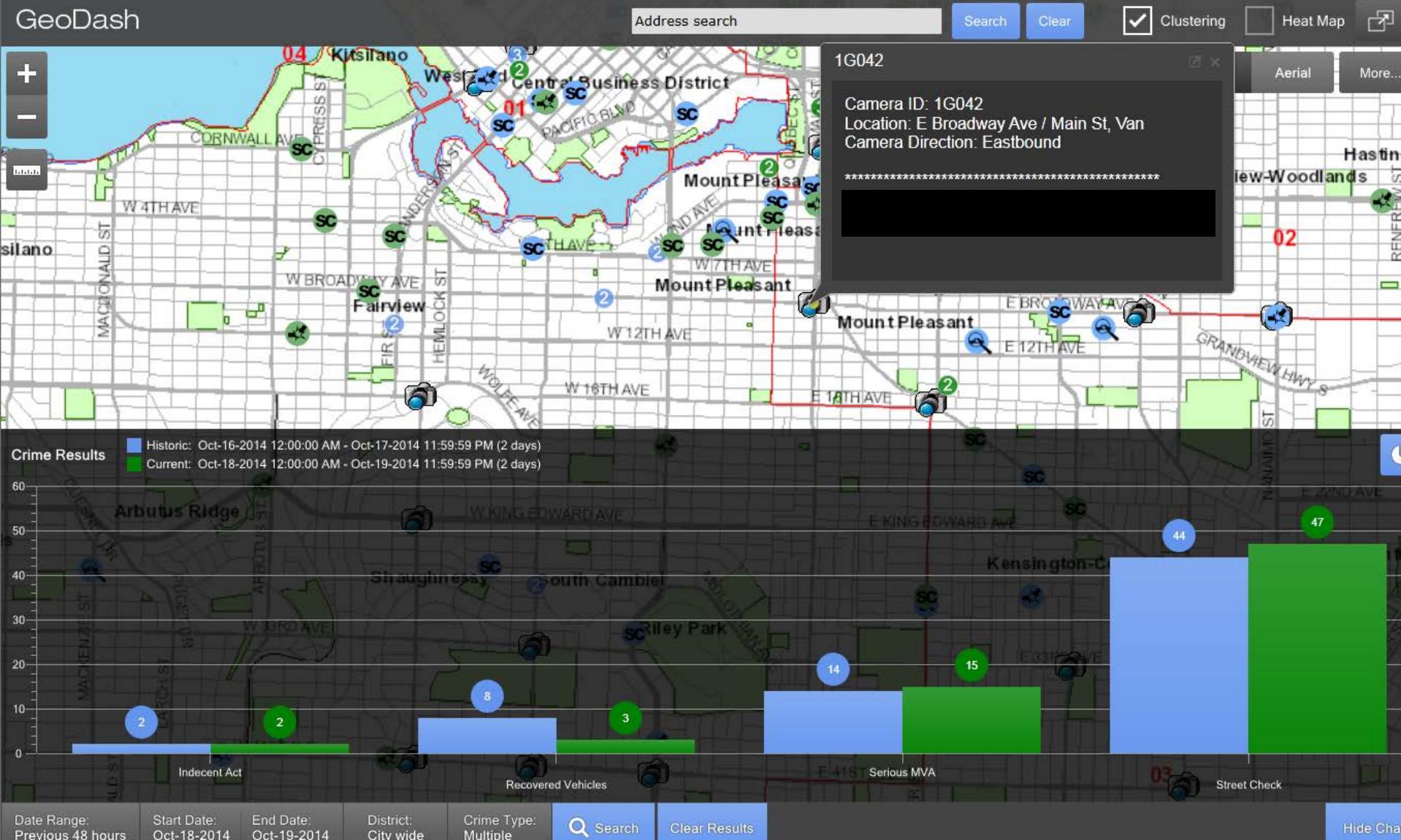
GeoDASH

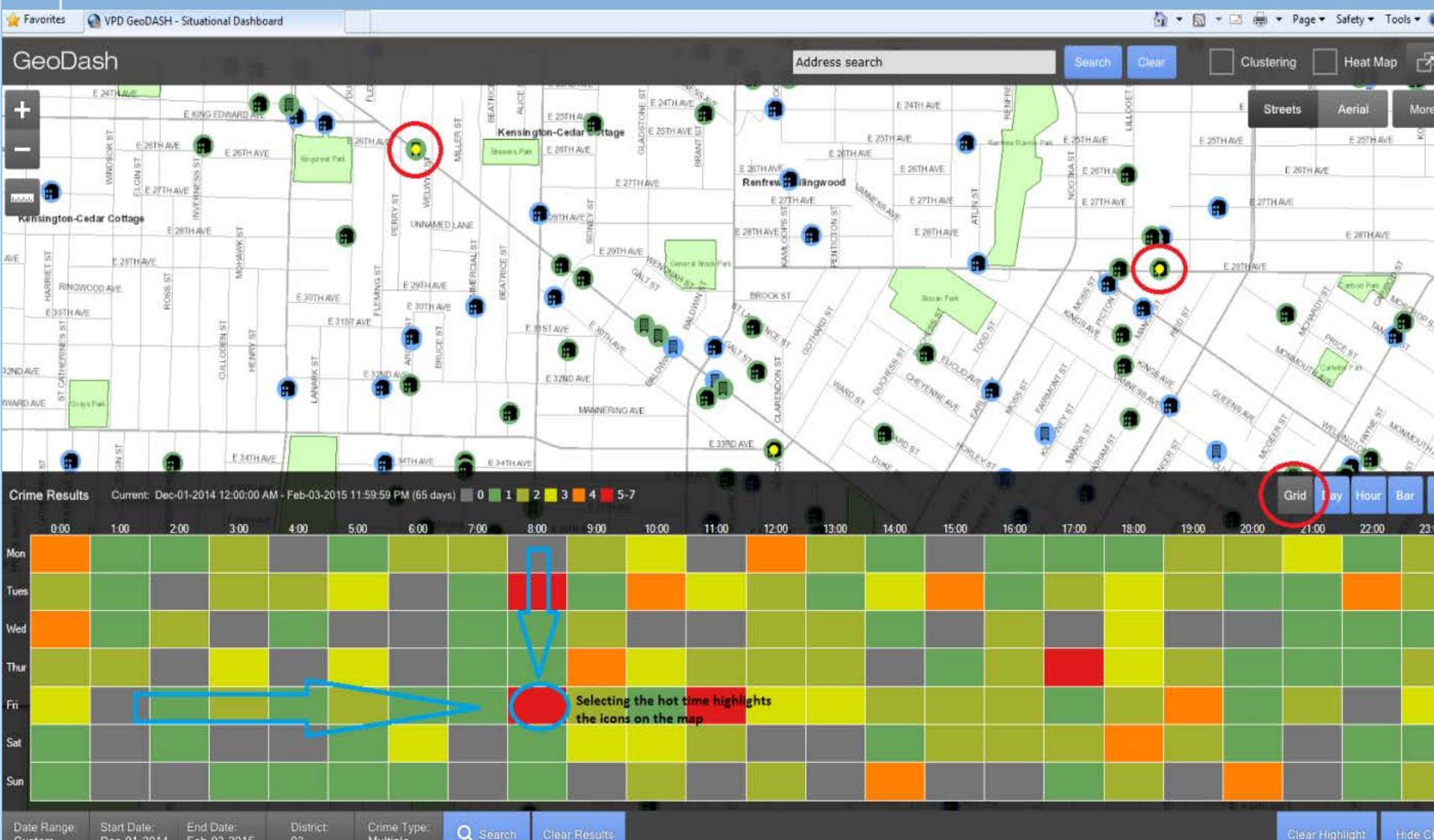
Patrol Car (Mobile GeoDASH) situational dashboard using a cellular connected MDT



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GeoDASH

Empowering VPD members to
be proactive.

- Patrol driven project
- Supporting intel-led policing
- Provide situational awareness **and**
instant access to relevant **resources**
- Ability to target crime faster





GeoDASH

Mobile Command Centre (Intranet GeoDASH)



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What is Predictive Policing?

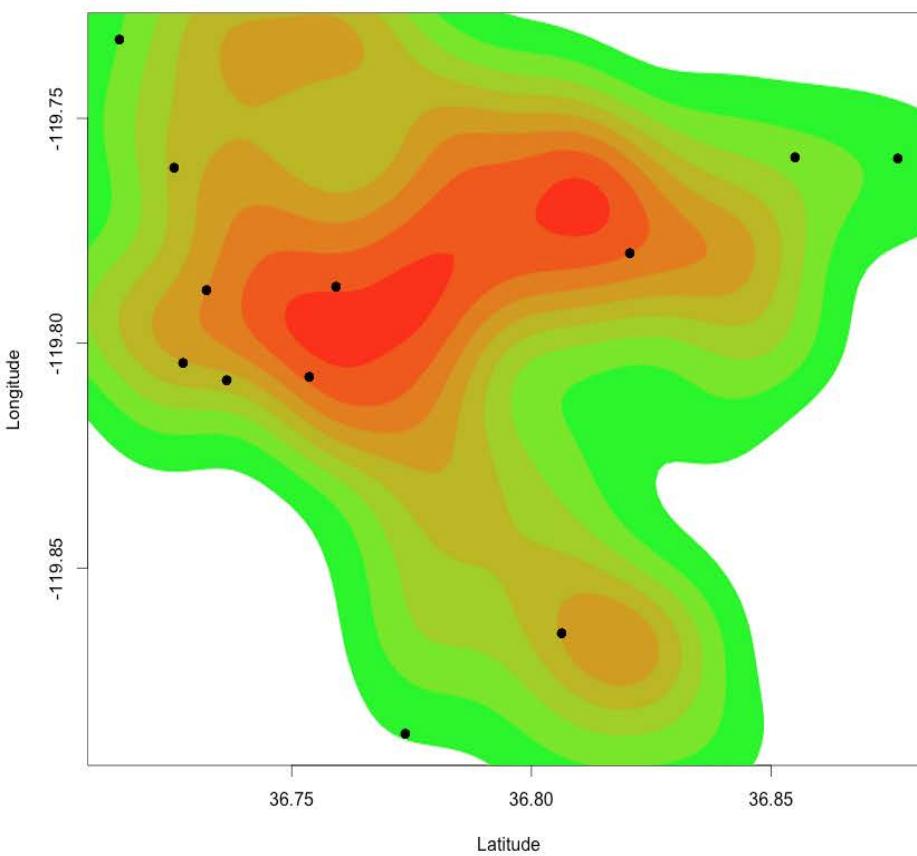
Evolution in technology from knowing what happened to forecasting what will happen

- Uses latest Machine Learning Neural Network technology
- Human activity tends to repeat and follow systematic patterns
- Crime (offenders) influenced by a multitude of factors
 - weather, season, human activity (work / home), neighbourhood composition, roads, graffiti, lighting, guardians, transit, etc., etc.
- Not a true 'prediction' but forecasts highest probability of an occurrence

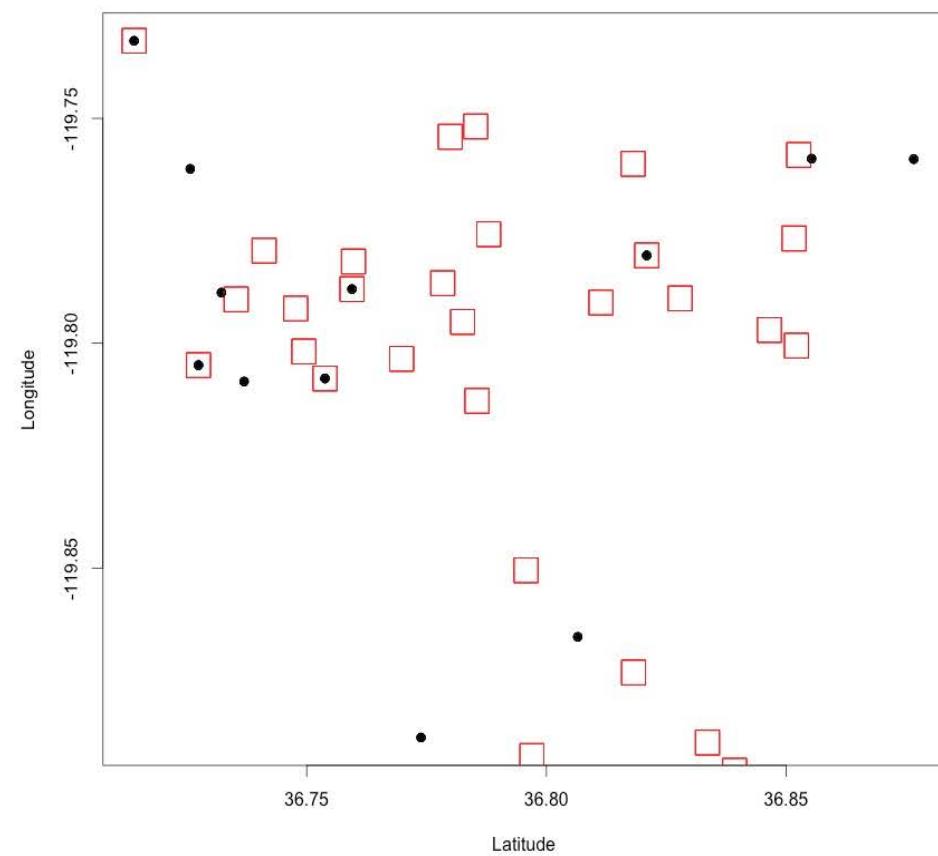


Hotspots compared to Predictions

Day 12 Heat Map



Day 12 Predictive Boxes





Predictive Policing

A first in Canada

The screenshot shows the CTV News Vancouver website. At the top, there's a banner with two anchors, a woman in a blue blazer and a man in a suit, standing in front of a city skyline. The banner includes the CTV logo and the text "LIVE NOW: CTV News at Noon". Below the banner is a navigation bar with links for NEWS, VIDEO, WEATHER, MORNING LIVE, MORE, CONTESTS, ABOUT, and LOCAL. The main headline on the page reads "Police tech could stop crimes before they even happen". Below the headline is a video thumbnail showing two anchors at a news desk with a city skyline in the background. To the right of the video thumbnail is a text box with the heading "Tool helps Vancouver police 'predict' crimes" and a brief description: "Vancouver police have a tool that helps 'predict' crime by creating algorithms using historical data." A play button icon is next to the video thumbnail.

<http://bc.ctvnews.ca/police-tech-could-stop-crimes-before-they-even-happen-1.1418407>



Surveillance and predictive policing: Welcome to the 'safety state' of tomorrow

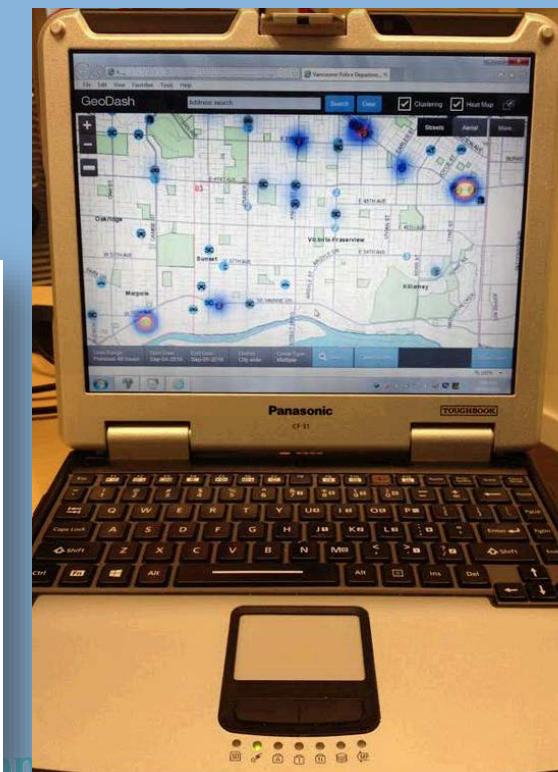
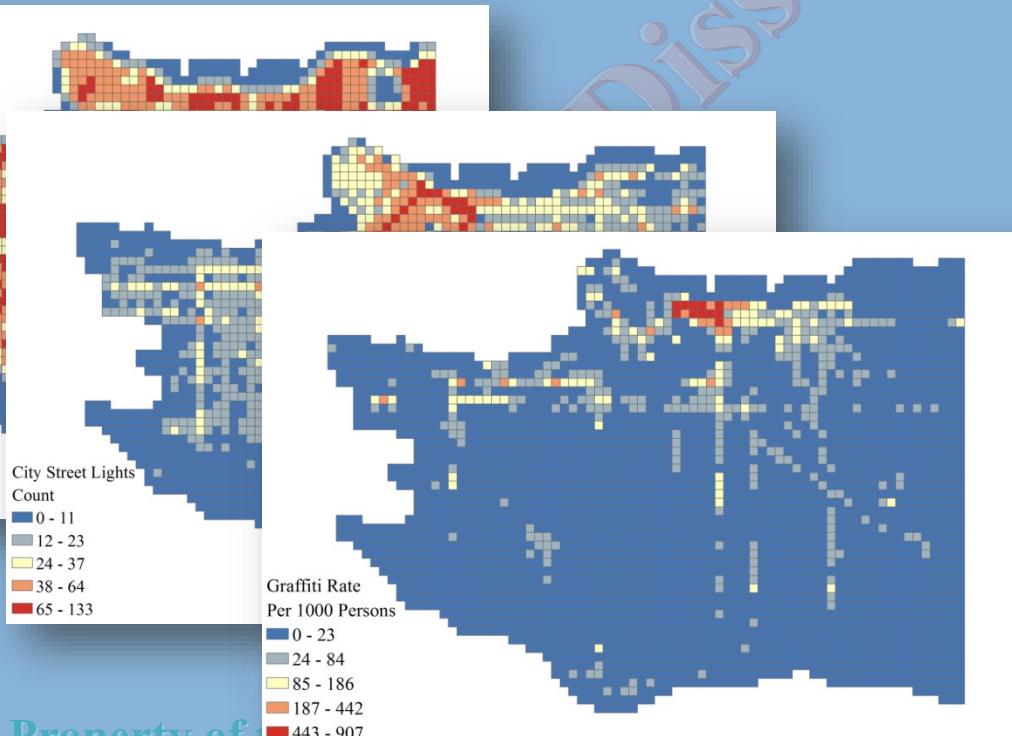
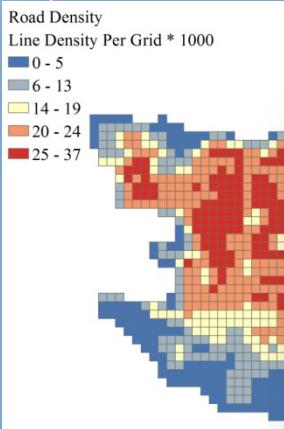
Experts expect policing of the future to include data collection online and programs that "predict" crime





Predictive Mapping of Crime

- Vancouver Police Predictive System can forecast and map BNEs at two hour intervals
 - Effective as an automated system
 - Integrates with existing GeoDash environment





BNE spatial trends

Residential BNEs 2001-2011

Count
■ 0 - 10
■ 11 - 27
■ 28 - 52
■ 53 - 91
■ 92 - 181

Residential BNE Hot Spots



Quadratic Density * 100,000

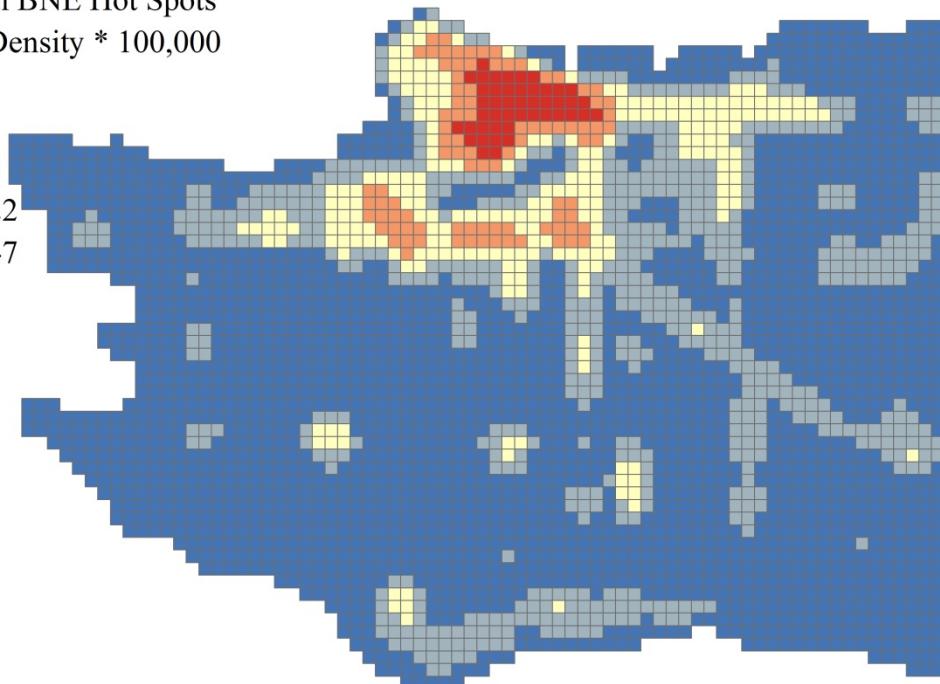
Commercial BNEs 2001-2011

Count
■ 0 - 11
■ 12 - 37
■ 38 - 85
■ 86 - 165
■ 166 - 351



Commercial BNE Hot Spots

Quadratic Density * 100,000
■ 0 - 17
■ 18 - 49
■ 50 - 103
■ 104 - 222
■ 223 - 447



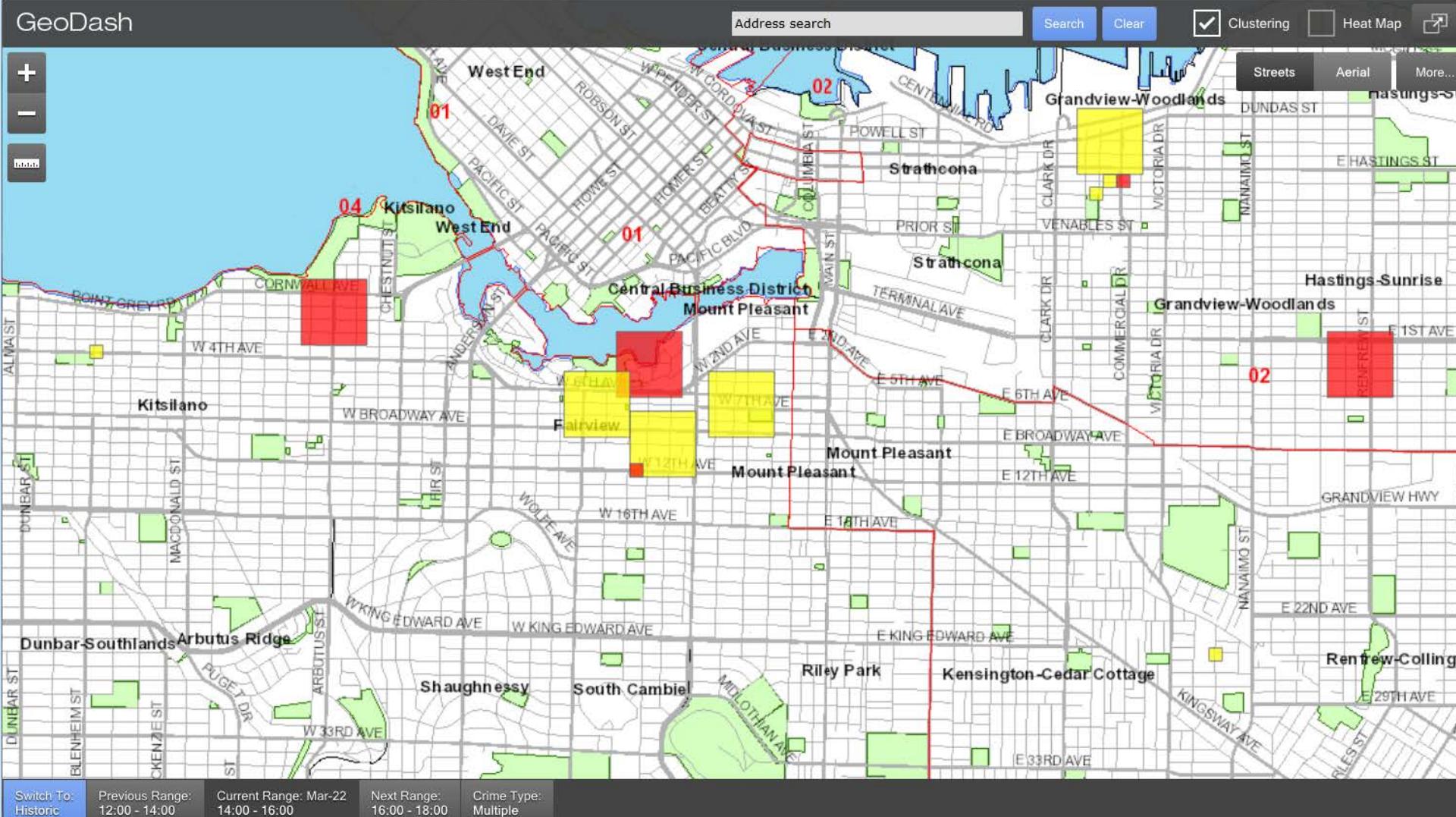


100 Meter Enforcement Zones





MDT Predictive Interface



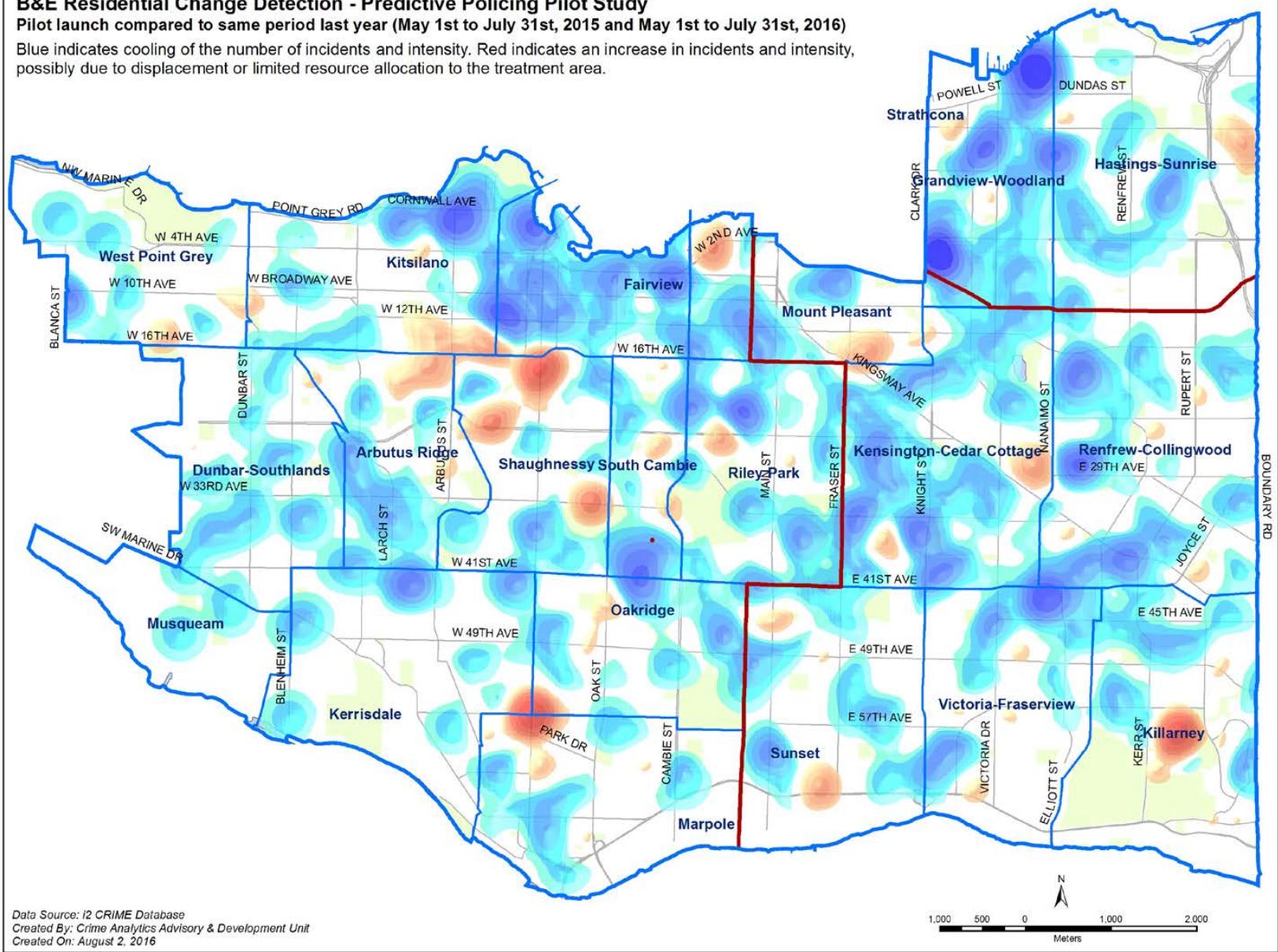


KDE Change Detection

B&E Residential Change Detection - Predictive Policing Pilot Study

Pilot launch compared to same period last year (May 1st to July 31st, 2015 and May 1st to July 31st, 2016)

Blue indicates cooling of the number of incidents and intensity. Red indicates an increase in incidents and intensity possibly due to displacement or limited resource allocation to the treatment area.





Ethical Implications of AI & Public Perceptions

Before the Bullet Hits the Body:

Dismantling Predictive Policing in Los Angeles

Tuesday May 8th at 8:30AM Please join the Stop LAPD Spying Coalition at LAPD Headquarters, 100 W. 1st Street DTLA 90012, where the Coalition will hold a press conference to detail the release of a community-based report regarding two LAPD predictive policing programs.





Public Safety vs Big Brother



- How do we handle AI driven predictive analytics humanely?
- The question should not be what is possible but what should we do?
- Are individuals or issues being targeted?



questions?



Ryan Prox

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Crime Analytics Advisory & Development Unit
Vancouver Police Department
email: ryan.prox@vpd.ca



thank you!