



Location Intelligence Technology in Emergency Management

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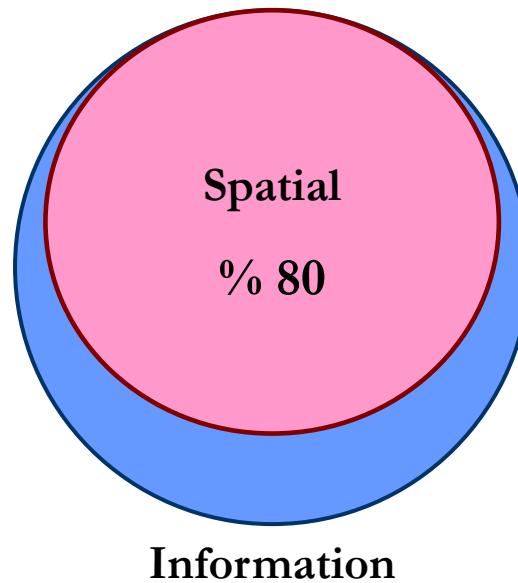
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Working in conjunction
with Communities,
Government, Agencies
and Business

Spatial Data

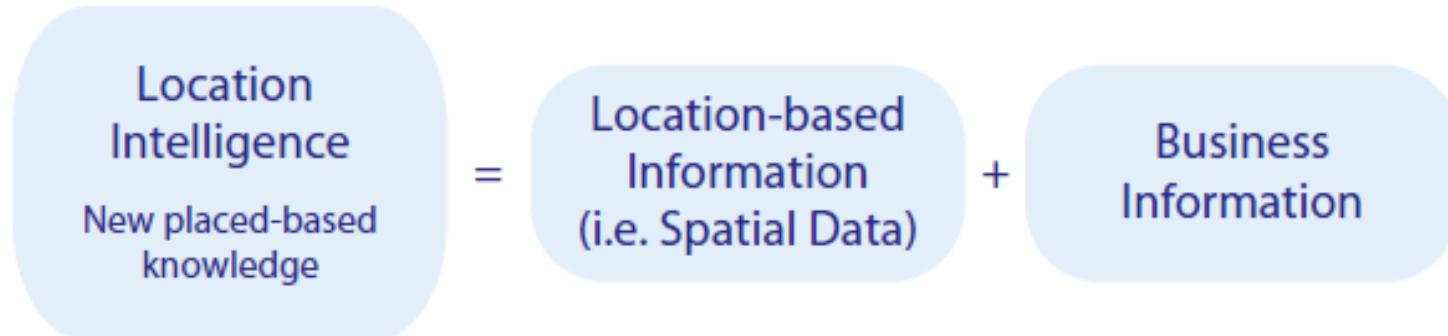
**80 percent of information has
Spatial dimension!**



**We need a system to manage
Spatial Information**

Location Intelligence

- When you combine location-based information with other types of business information – such as financial data, service delivery data, client information, trends, and census information – you create location intelligence.
- Location intelligence effectively involves adding a spatial dimension to business information to provide new, enhanced place-based knowledge.





Location Intelligence benefits

The ability to analyse business information in the context of its location, enables an integrated and holistic approach to problem-solving, decision-making and ultimately creating practical outcomes.

Background

Long Arc Of Mapping video



An emergency event

The actual or imminent occurrence of an event which in any way endangers or threatens to endanger the safety or health of any person in Victoria, or threatens to destroy or damage any property in Victoria or endangers or threatens to endanger the environment on an element of the environment in Victoria...



Bushfire/
Heatwave



Earthquake/
Transport
Infrastructure



Animal
Disease



Plant
Disease



Flood/
Storm



Electricity
Supply
Disruption



Pandemic
Influenza



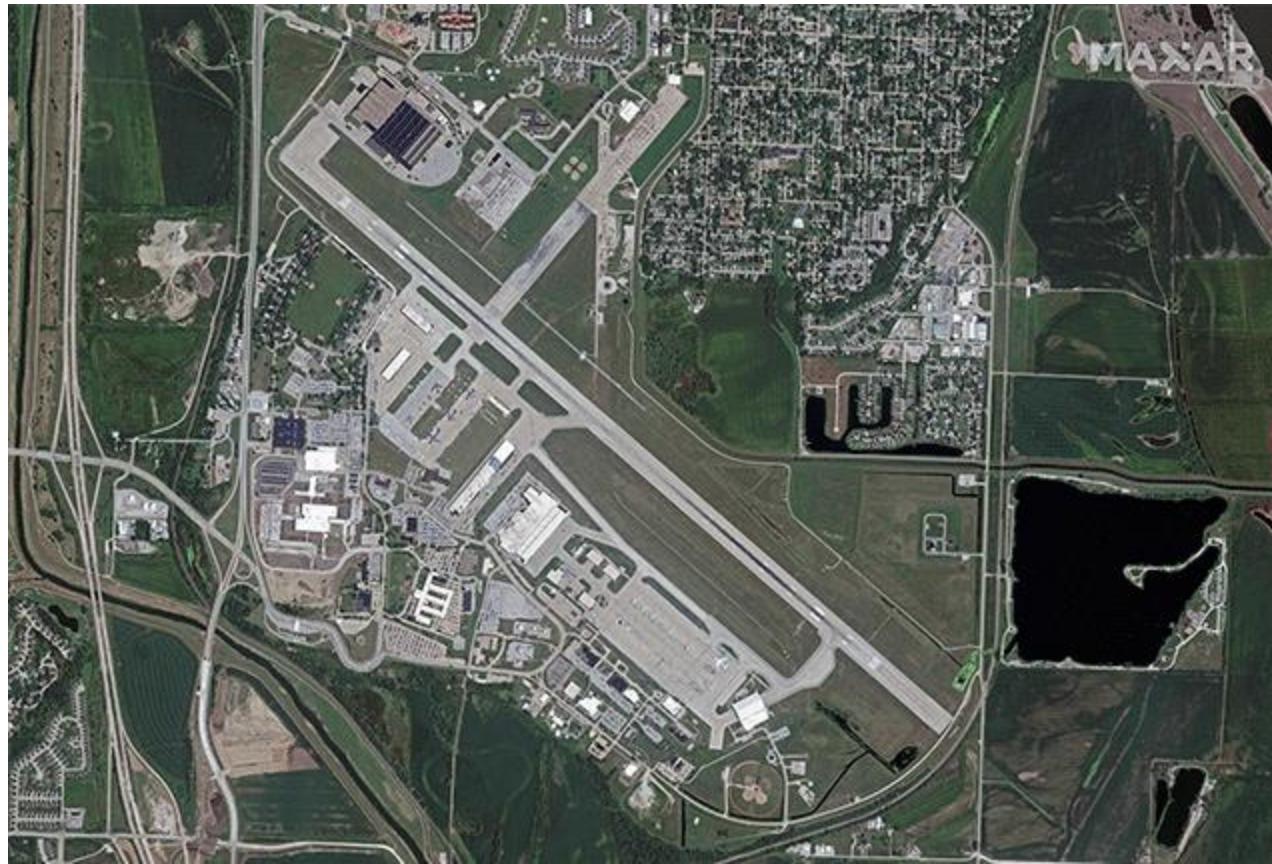
Hazmat
Emergency

Emergency vs Disaster



Redefining Disasters

Hazards only lead to disaster if they intersect with an exposed and vulnerable society and when the consequences exceed its capacity to cope



Redefining Disasters

Disaster is in charge we are in control





Victoria's Emergency Management Arrangements

Why EMV?

Black Saturday



**Claimed the Lives
of 173 people**



**414 were injured and many
more were displaced..**

What went wrong ?





Decision-making is critical





EMV - We Work As One

Communities, Government, Agencies & Business



Our shared vision

Safer and more resilient communities



From sheep to shore

The objective of emergency management in Victoria is to reduce the impact of emergencies on human life, communities, essential and community infrastructure and the environment.



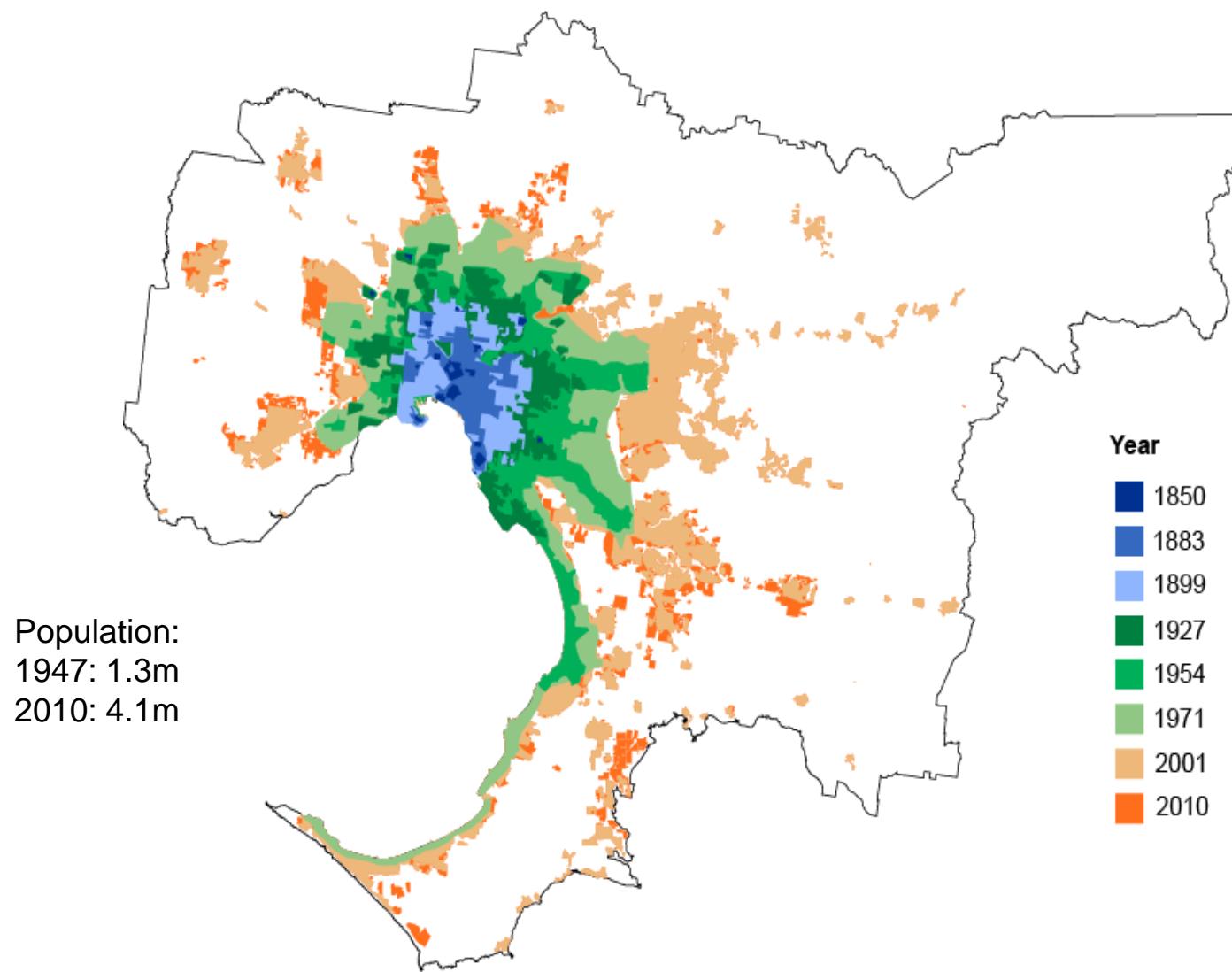
Challenges

- Population change
- Climate change
- Urbanisation
- Globalisation
- Community look & expectations

Every 11 hours, in Melbourne's suburban growth areas, enough babies are born to fill an entire prep class.

Victoria can expect higher-than-average temperatures, more days above 35 degrees, reduced rainfall, and an increased number of droughts and extreme weather events, including more frequent bushfires and storm activity

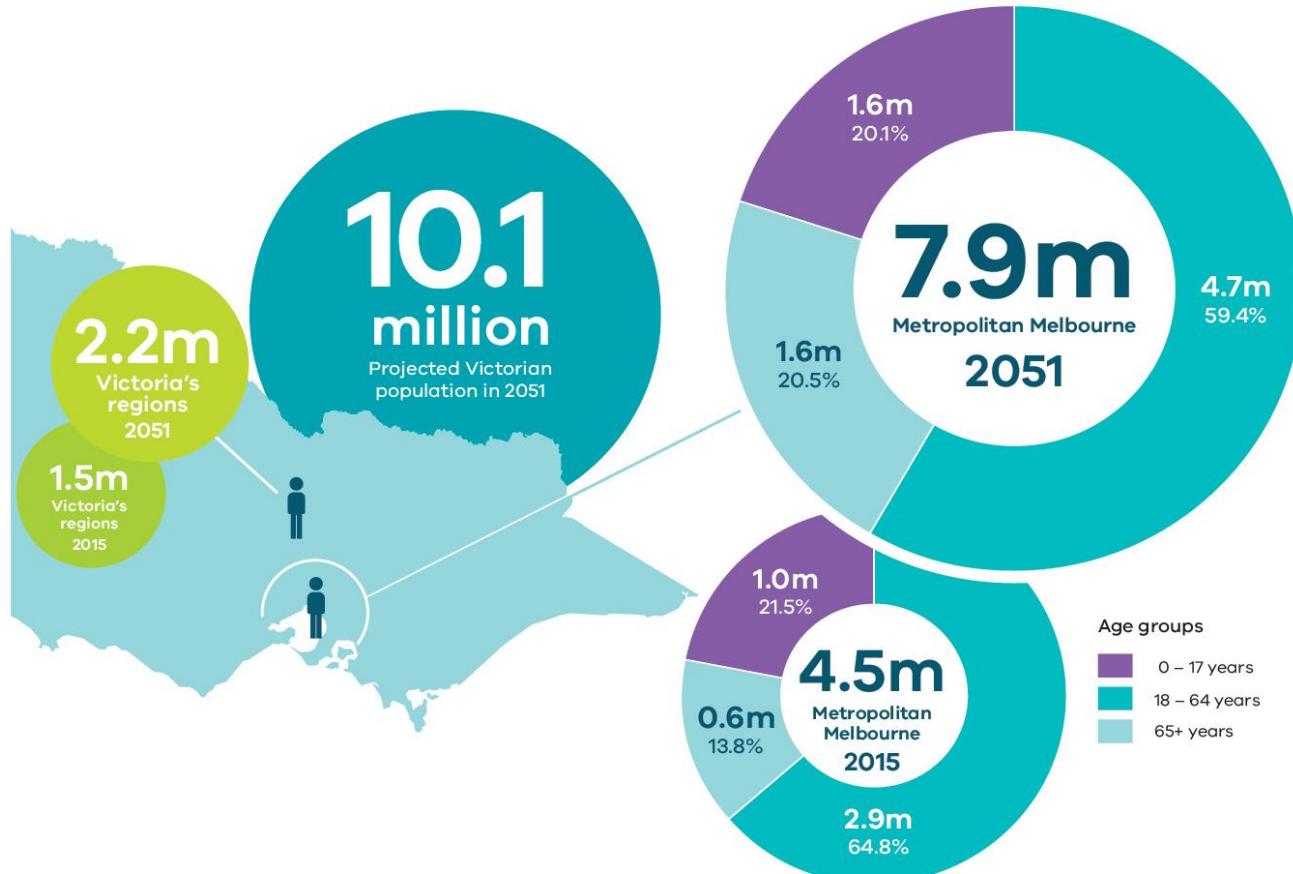
Melbourne Metro Development



Plan Melbourne Refresh



Victoria's projected population growth



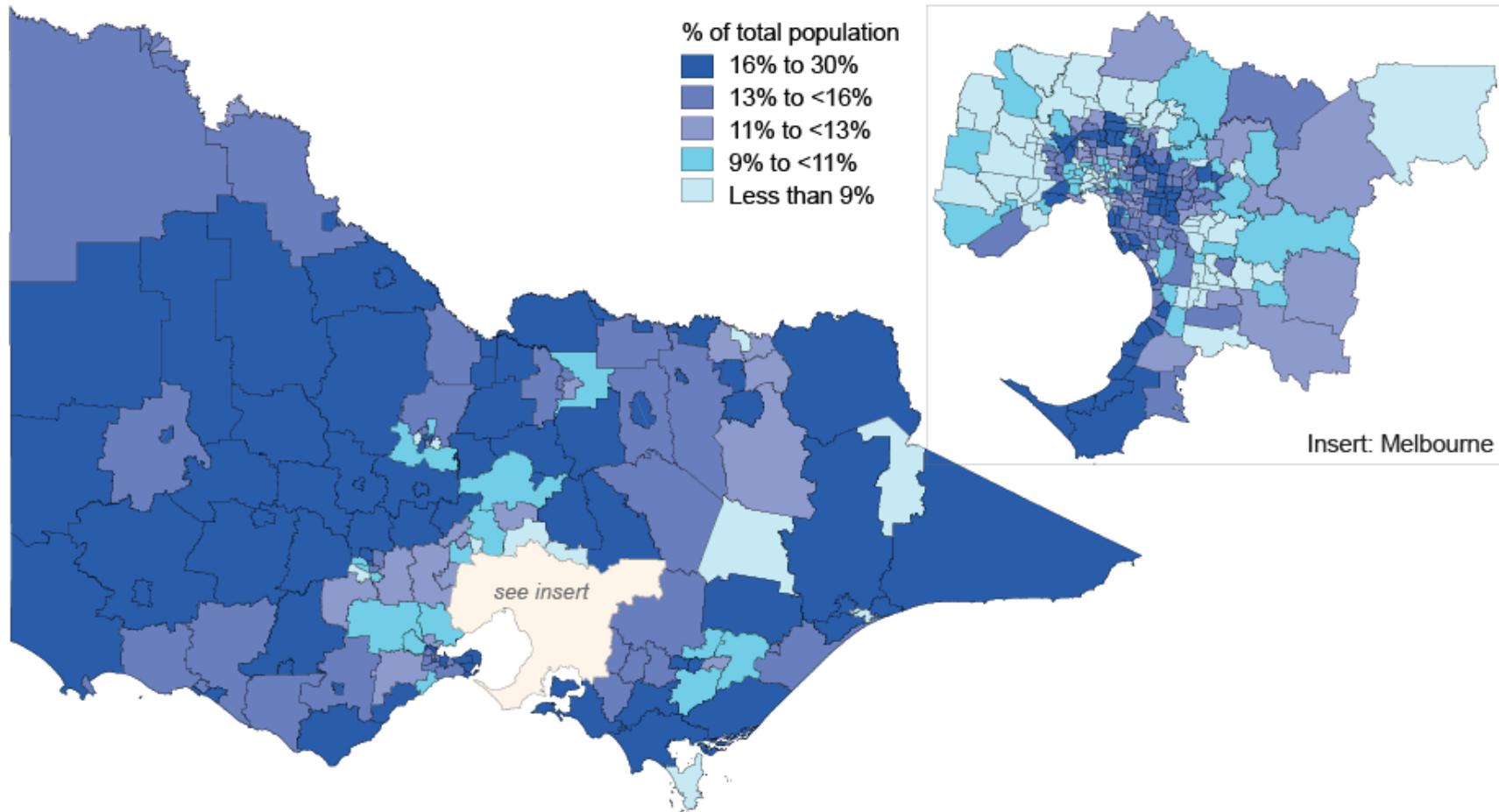
Source: Victoria in Future 2016

Demographic Analysis

Older populations are found in middle suburbs and regional areas



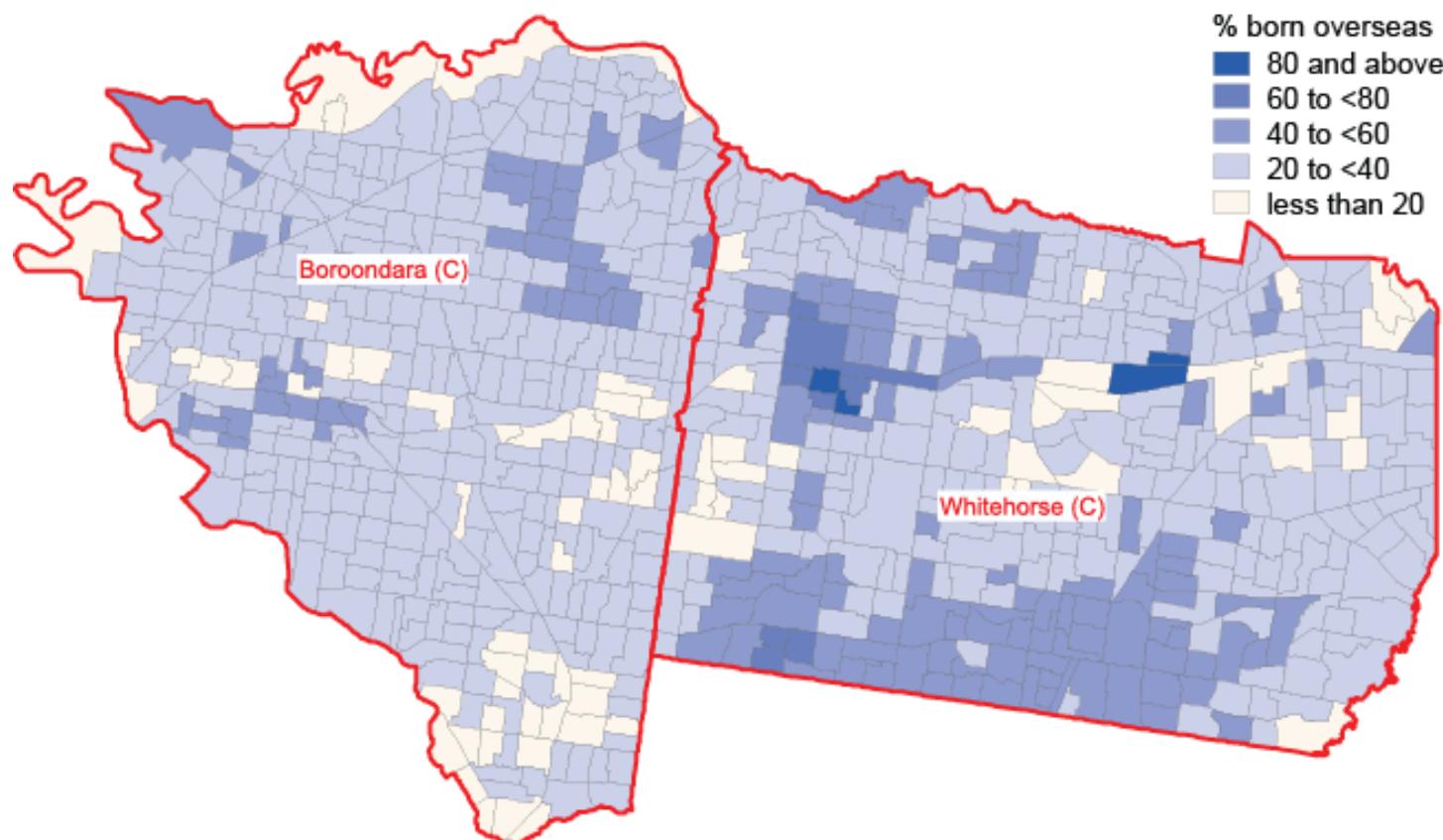
Proportion aged 65 years and over, Victorian SA2 geography, 2011



Source: ABS Census 2011

Demographic Analysis

Proportion of people born overseas, SA1 geography
Boroondara and Whitehorse LGAs 2011



Source: ABS Census 2011

Climate Change



HOW WILL CLIMATE CHANGE AFFECT AUSTRALIA?

 Cyclones are likely to become more intense, but less frequent.

 Extreme rainfall events are expected to become more intense.

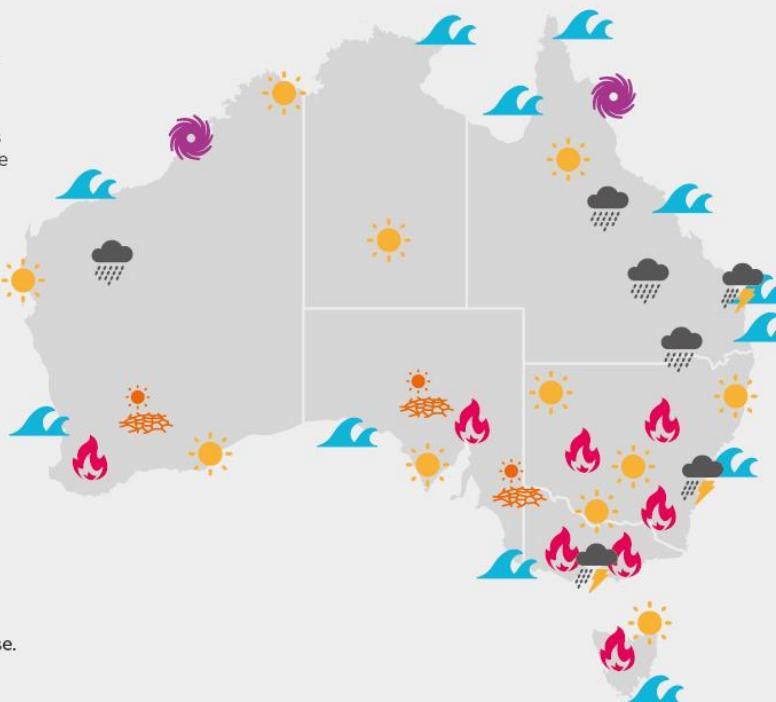
 Hotter and drier conditions will lead to harsher bushfire weather.

 Heatwaves will become even longer and hotter.

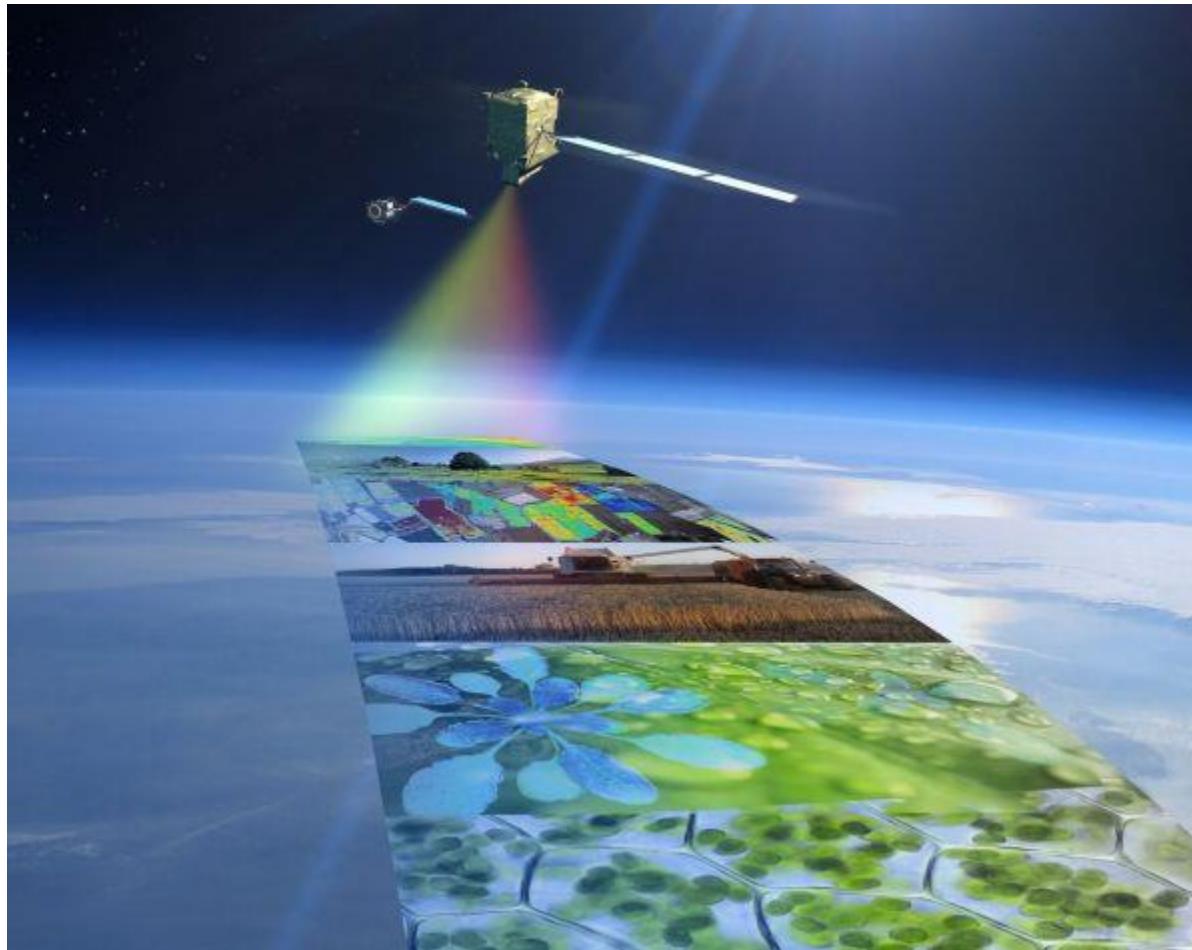
 Higher sea levels will increase flooding in coastal cities and towns.

 Potential severe thunderstorm days are expected to increase.

 Droughts are likely to happen even more often.



Geospatial Intelligence Video





Emergency Management Common Operating Picture (EM-COP)

Advantages of EM-COP

- Simple to learn and use.
- Allows online collaboration in near-real time.
- Able to operate from multiple remote locations.
- Accessible to all stakeholders .
- Uses a Web Browser – no installed software.
- Uses low band width and data.
- Hosted on scalable infrastructure.
- Customised access and views for specific audiences.
- Handles 1000's of users, 100's of incidents.
- Permanent record of information.



EM-COP Operations Video

Single Point of Truth and Trust

A large, scenic photograph of a forested mountain range with thick smoke billowing from the slopes, indicating a wildfire. This image serves as the background for the entire slide.

EM COP for Situational Awareness

1 How to register		2 EM-COP Overview		3 Map View
	4 Information Buttons	5 Measuring Tool	6 Incidents	
7 Rooms & Chats	8 Log		9 Useful Layers And Hints	

Single Point of Truth and Trust



EM-COP for Collaboration

Create
Rooms

1



Drawing
Tools

2



Whiteboard
Chat

3

Private
Chat



Create
Incidents

5



Map
Position
Sync

6

EM-COP for Creating Public Information

Public Publisher
Users

1



Creating a
Polygon

2



Notifications

3

Notification
Life Cycle



Message
Management
Dashboard

5



Assessment

6



EM-COP Operations – information sharing

Situational awareness & collaboration before,
during & after an emergency



EM-COP Public

VicEmergency - Public information & warnings



VIC EMERGENCY PREPARE & GET READY INCIDENTS & WARNINGS RELIEF & RECOVERY In an emergency, call Triple Zero (000)

List Both Map Filter Search address...

Warnings 13 Incidents 14

Type Updated

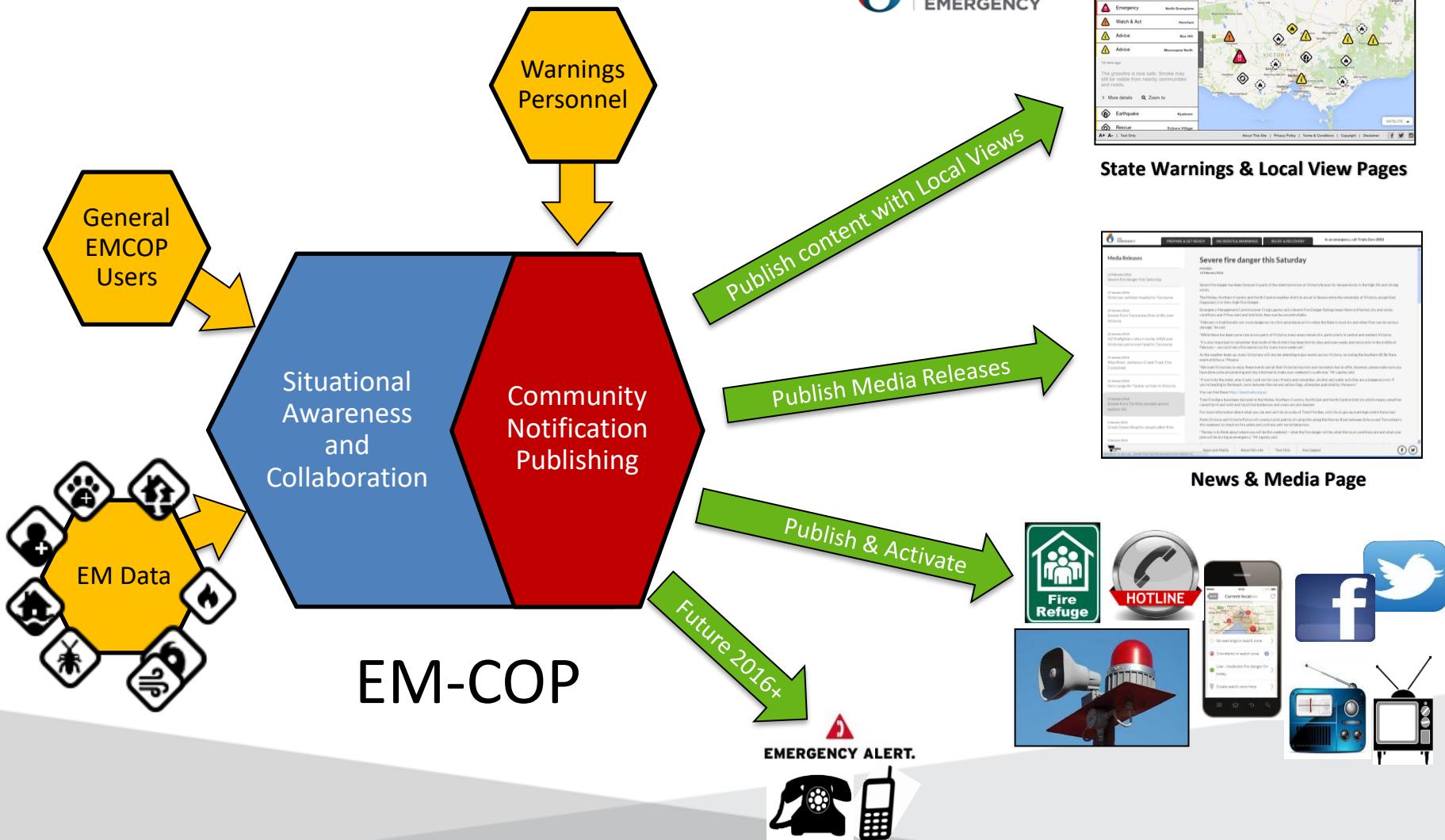
Type	Updated
Warning - Flood	3 hours ago
Warning - Flood	3 hours ago
Warning - Flood	4 hours ago
Advice - Flood	an hour ago
Advice - Flood	2 hours ago
Advice - Flood	2 hours ago
Advice - Flood	3 hours ago
Advice - Flood	3 hours ago
Advice - Flood	3 hours ago
Advice - Flood	3 hours ago
Advice - Flood	3 hours ago
Advice - Flood	3 hours ago
Advice - Flood	3 hours ago
Advice - Flood	3 hours ago
Advice - Flood	3 hours ago

Map View: A map of Victoria, Australia, showing flood warnings and advice across the state. The map includes major cities like Melbourne, Geelong, Ballarat, Bendigo, Albury, Wagga Wagga, and Canberra. Flood warnings are indicated by orange and red shaded areas, while advice is shown as yellow shaded areas. Numerous warning and advice icons are placed on the map, often overlapping with specific locations like rivers or coastal areas. The map also shows state boundaries, major roads, and national parks.

Updated 08/07/2016 | Map data ©2016 Google | Terms of

Emergency Alert: A circular graphic containing various communication icons: Facebook, Twitter, a television, a mobile phone, a telephone, a megaphone, a fire refuge sign, and a hotline sign.

EM-COP Collaboration



Workspace

Incidents

No Incident Selected

Rooms

Maps

Data

Tracking

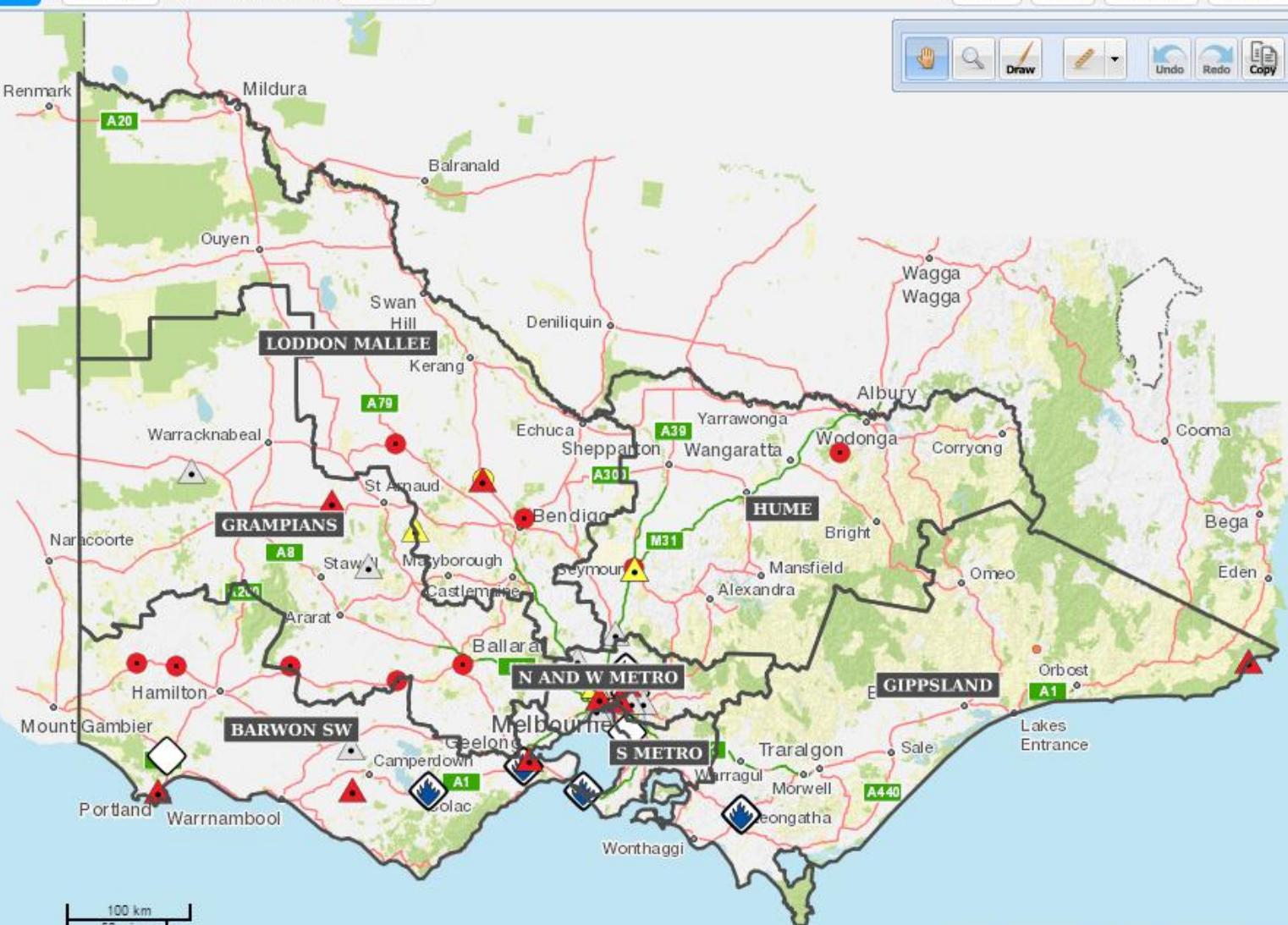
Weather

Tools



Zoom

7



Zoom: 7 Lat: 39°18'15.7"S Lon: 142°58'53.4"E



09:54:00 Thu 15-Sep-2016

SEARCH: X Advanced Show

Latest

TYPE: Ops Safety Intel Msg

PRIORITY: Routine Priority Urgent

Add

No	Date	Type	Priority	Recv'd	Agency	Region	Status	Ref No	Name	Subject	Details
											for people in the North East, west and South Gippsland and East Gippsland forecast districts Issued at 10:25 pm EST on Sunday 17 July 2016.
345	2016-07-17 20:59:41	Ops	Routine	N/A	All	VIC	Confirmed		Steven Riley	EMT update	EMT conducted at 2038: Main reference to unauthorised media coverage around VicRoads capability and operations room in CBD. VicPOL advise that no releases to media unless authorised by VicPOL.. VIP event running behind Action item completed - notify EMV media that there are no unauthorised messaged to be released around the VIP visit.
344	2016-07-17 19:45:42	Ops	Routine	N/A	All	VIC	Confirmed		Justin Kibell	EMCOP Incident details	Steve Riley - on duty SESC. Please advise EMCOP incident - State Overview for today, Situation room. Steve, you have permission to r/w in the secure room.
343	2016-07-17 19:44:35	Ops	Routine	N/A	All	VIC	Confirmed		Steven Riley	Notification	Steve Riley - on duty SESC. Please advise EMCOP incident
342	2016-07-17 15:59:42	Intel	Routine	N/A	All	VIC	Confirmed		Liam McCall	Intel Assessment 17/7/2016 1500hrs	Attached is the social intel assessment for 17/7/2016 current as of 1500hrs Attachments: Social-Media-Intel-Assessment-17-07-2016-1500hrs.pdf
341	2016-07-17 15:59:33	Ops	Routine	N/A	VicPol	VIC	Confirmed	Cadence	Greg Murphy	Afternoon shift change over	Warning officer changed over from T Duckmantion to B Irvin 1515 IMT14/EMT BLM rally has dispersed Itinerary for remainder of today confirmed 1545 SPOC Briefing Itinerary for remainder of today confirmed SPC change from DC CRISP to AC FRYER est 1000

EMERGENCY MANAGEMENT COMMON OPERATING PICTURE
SITUATION
LOG
DESKTOP
LIBRARY
HELP

Operations
Weather
Warnings
Sections
Training
Rosters
EM Partners
SCT
SCC Support

Justin Kibell ▾ Logout

State

Operations – Multi Hazard / Multi Agency



Operations – Hazard / Agency Specific



Briefings & Reports



Information Displays

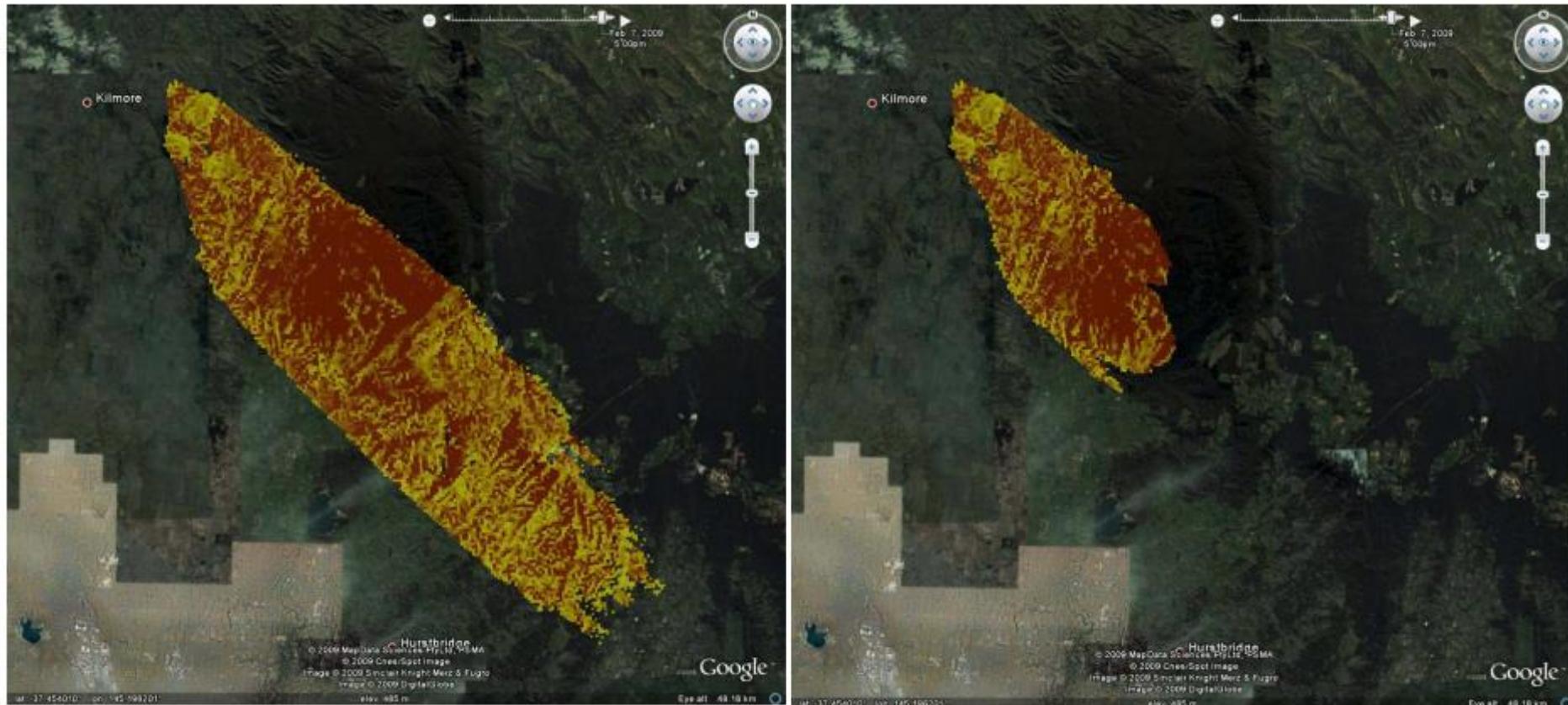




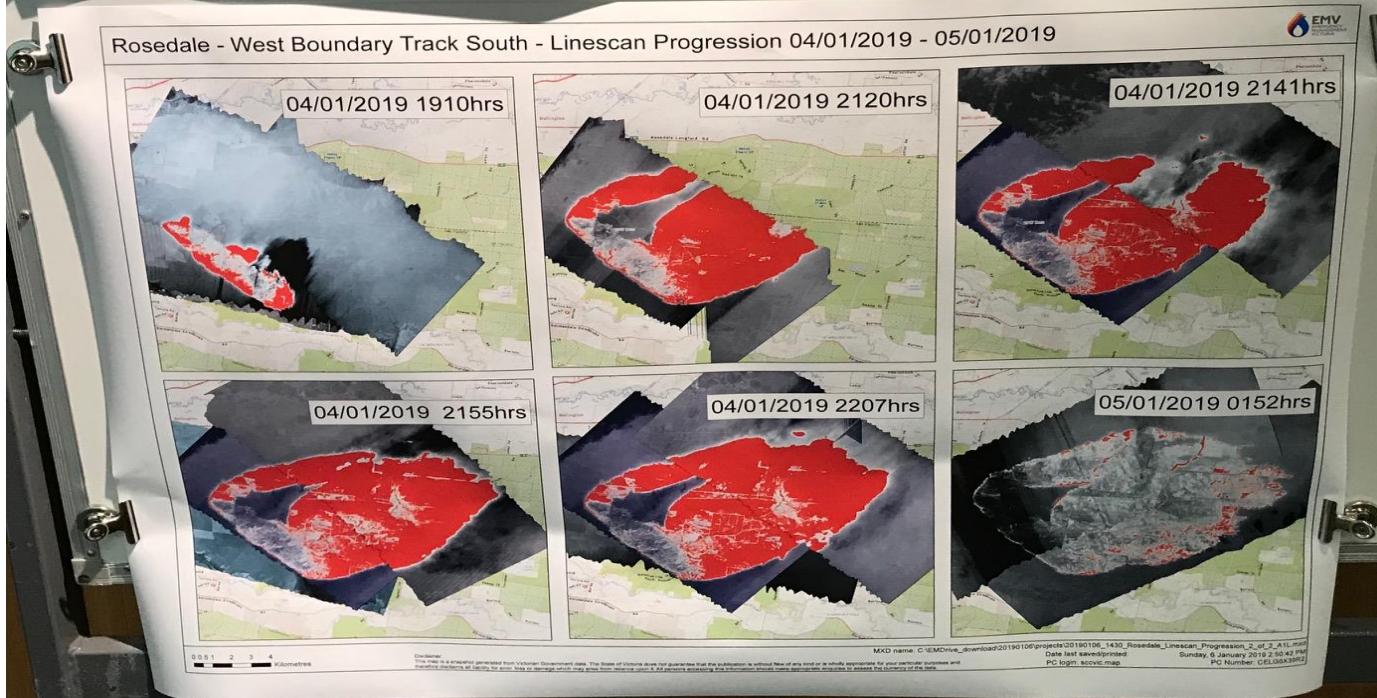
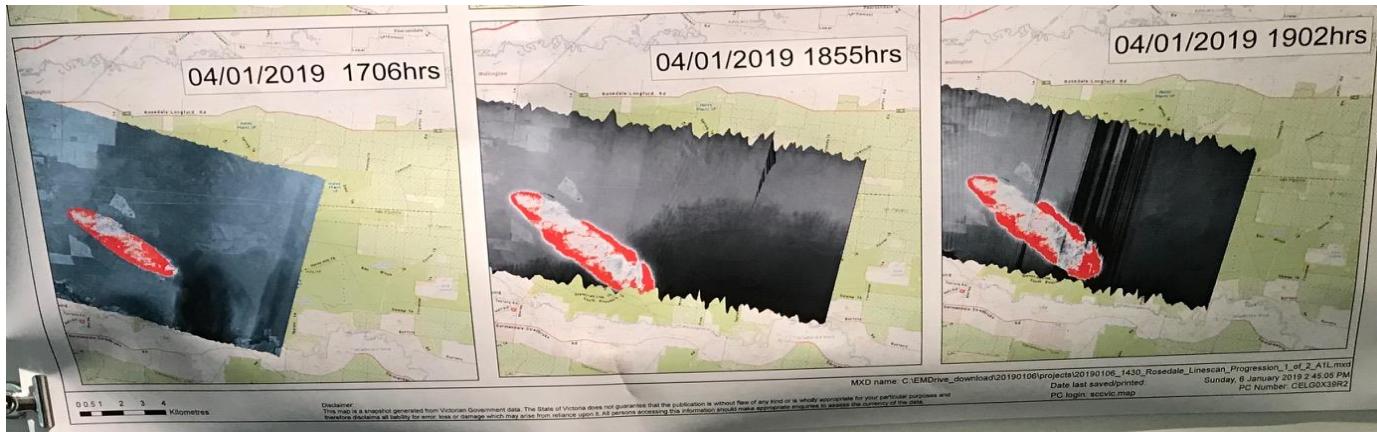
Examples of EM Geospatial Tools

Fire behaviour modelling

Phoenix



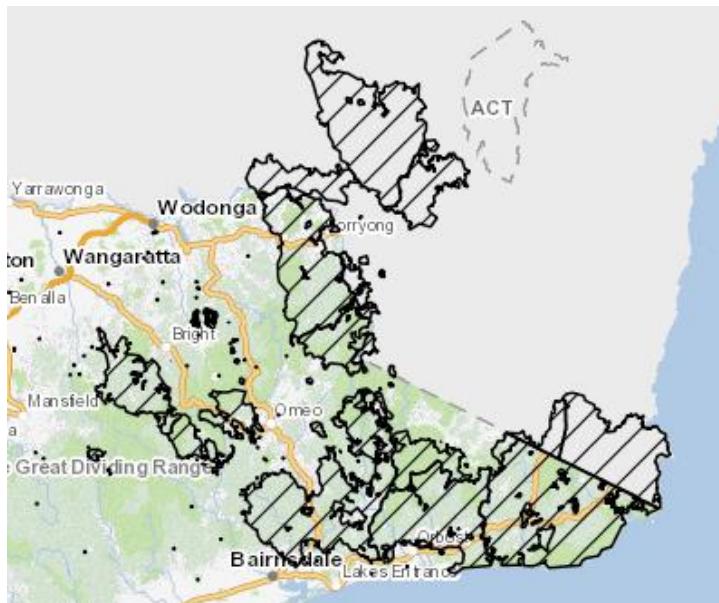
Linescan Operation



2019-2020 Victorian Bushfire



- More than 1.5 million hectares burnt
- Fire across VIC and NSW



- Collaboration! More important than ever

EMSINA



Bushfire Boundaries Dashboard





Covid19 Pandemic

John Hopkins Coronavirus Resource Centre



JOHNS HOPKINS UNIVERSITY & MEDICINE | CORONAVIRUS RESOURCE CENTER

Home Maps & Trends Testing News & Information COVID-19 Basics Videos & Live Events

World Map U.S. Map Critical Trends

COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University

Total Confirmed: **3,689,887**

Confirmed Cases by Country/Region/Sovereignty:

- 1,206,323 US
- 219,329 Spain
- 213,013 Italy
- 196,243 United Kingdom
- 170,694 France

Last Updated: 5/7/2020 12:32:31 a.m.

187 countries/regions

Lancet Inf Dis Article: [Here](#). Mobile Version: [Here](#).

Lead by JHU CSSE. Automation Support: Esri Living Atlas team and JHU

Global Deaths: **258,160**

Location	Deaths
US	71,152
United Kingdom	29,501
Italy	29,315
New York US	25,124
New Jersey US	8,244
France	4,212

US State Level Deaths, Recovered:

Location	Deaths	Recovered
US	25,124	58,950
New York US	25,124	58,950
New Jersey US	8,244	15,642

Deaths, Recovered:

- 25,124 deaths, 58,950 recovered New York US
- 8,244 deaths, 15,642 recovered New Jersey US
- 4.212 deaths. US Deaths, R...

Confirmed Daily Cases Logarithmic

Esri, FAO, NOAA

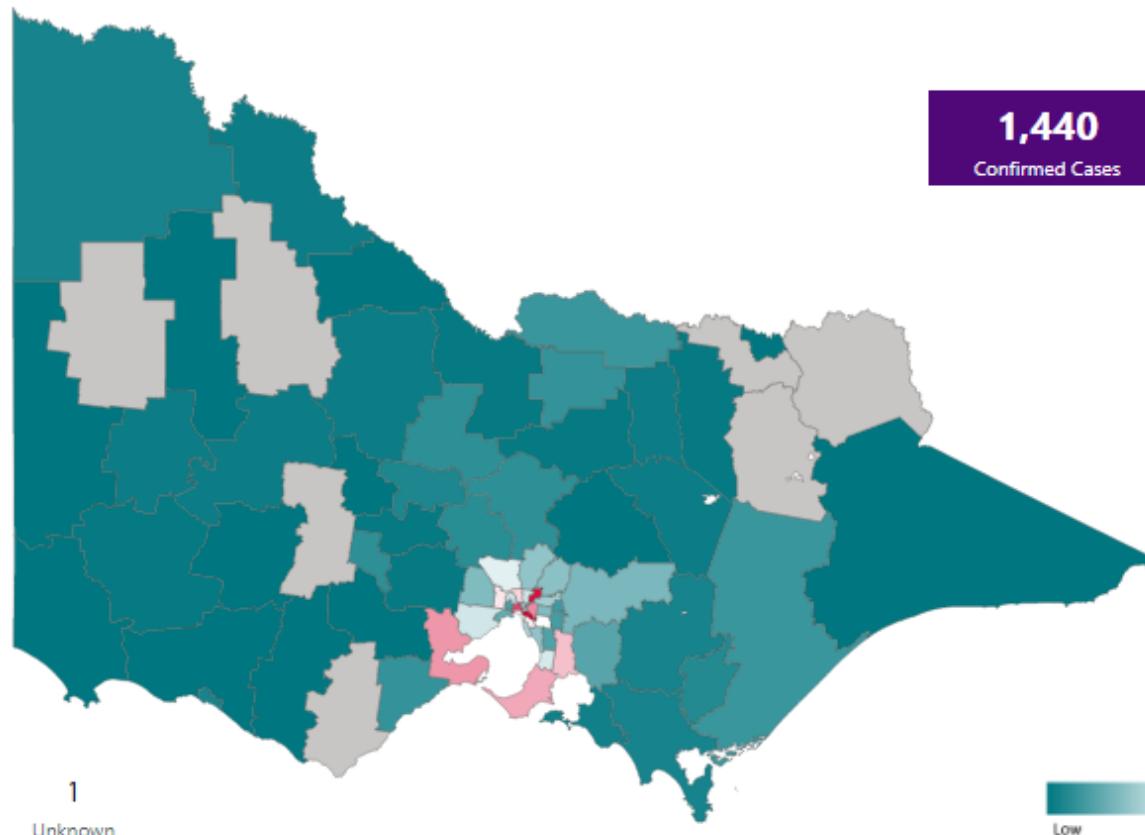
Covid19 Pandemic

Coronavirus COVID-19 in Victoria

Last updated: 06/05/2020 - 6:18:24 AM

LGA name	Cases
Ararat (RC)	1
Ballarat (C)	9
Banyule (C)	86
Bass Coast (S)	4
Baw Baw (S)	5
Bayside (C)	31
Benalla (RC)	3
Boroondara (C)	65
Brimbank (C)	49
Campaspe (S)	2
Cardinia (S)	16
Casey (C)	56
Central Goldfields (S)	1
Corangamite (S)	1
Darebin (C)	37
East Gippsland (S)	1
Frankston (C)	38
Gannawarra (S)	1
Glen Eira (C)	48
Glenelg (S)	1
Golden Plains (S)	1

Cases by local government area



7
Overseas
1
Unknown

Low
High



Covid19 Pandemic

Covid19 Pandemic Spread in Sydney
March-April 2020
(Video)

Not just in EM response!

Reconstruction of Notre-Dame Cathedral





Not just in EM response!

Reconstruction of Notre-Dame Cathedral
Video

Any Questions?





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and Business**