



# A Crash Course in Crisis Mapping

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Pacific Island GIS and RS User Conference

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Suva, Fiji

Imagine ...

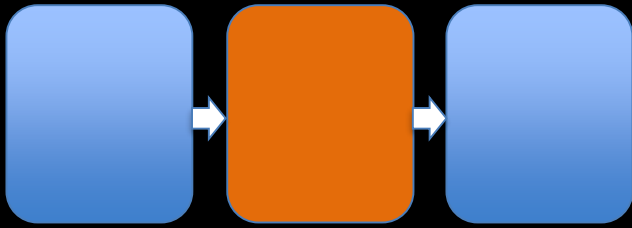
You are in the Spatial team at Christchurch City Council when the earthquake struck ... how would your GIS team cope?



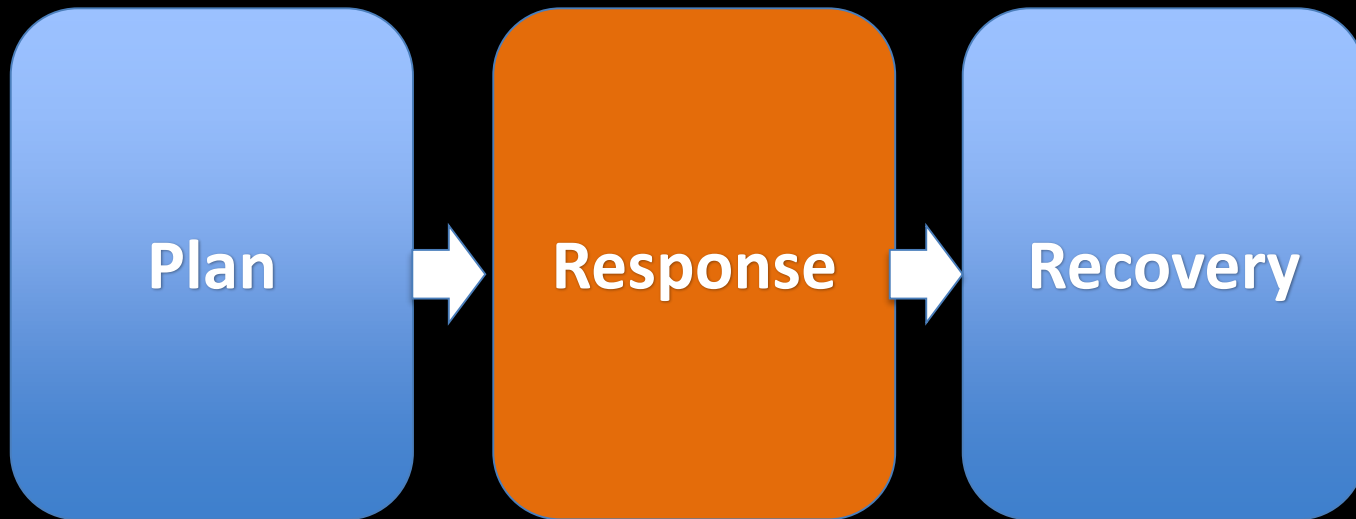


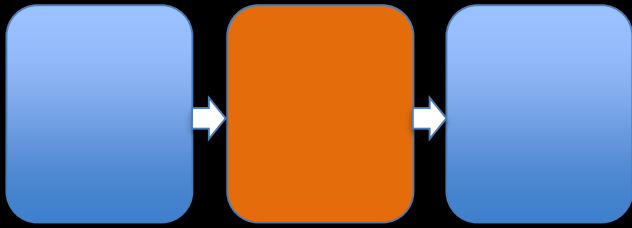
This presentation draws on a lot of experience and after action reports



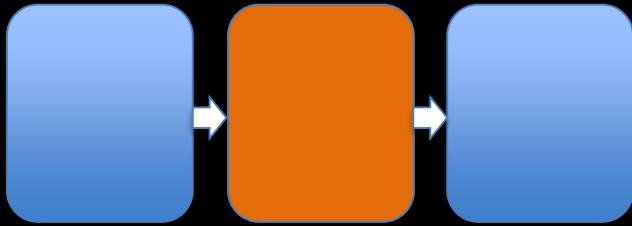


## The format





Let's have a look at what will  
happen in the Response phase for  
a local GIS team



## Crisis symptoms

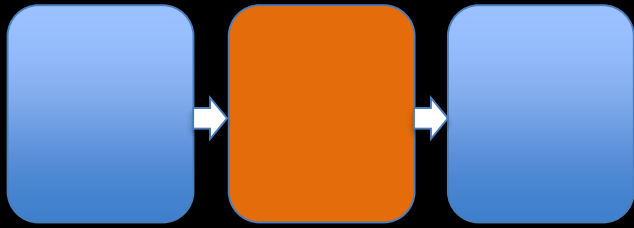
Data and application servers are struggling

Emails are arriving at 50x normal rate

Digital base map is no good in impacted areas

New mapping tasks arriving every 10 min

Deadlines are being missed



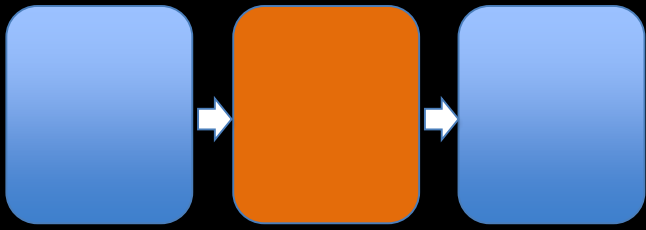
## Crisis symptoms

You need to create new data sets from scratch

The Big Boss has insisted that the GIS team  
assess a new technology

You need to work 24\*7 to cope with the workload

Staff are affected personally by the disaster



## Crisis symptoms

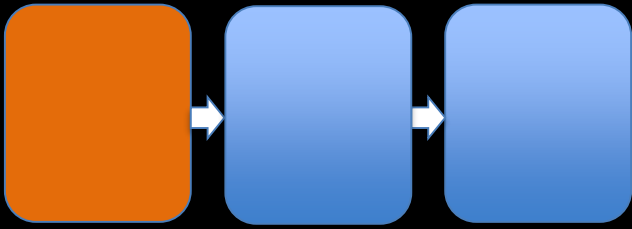
*“ three persistent sources of inefficiency emerged as we worked day and night ..*

*Data organisation and access, the chaotic work environment, and request tracking”*



Curtis, A., Mills, J., Blackburn, J., Pine, J.  
“Hurricane Katrina: GIS response for a major metropolitan area”  
Quick Response Report 180, Boulder, CO  
University of Colorado Natural Hazards Center



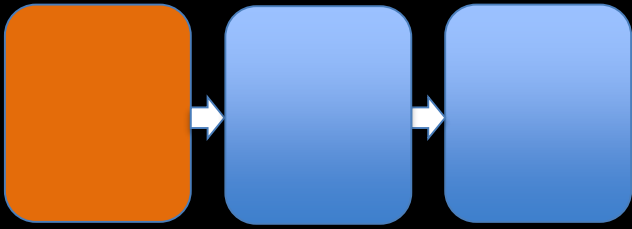


## *Coping Strategy #1*

Up to date system manuals

Operations/Response manuals, Business Continuity Plans

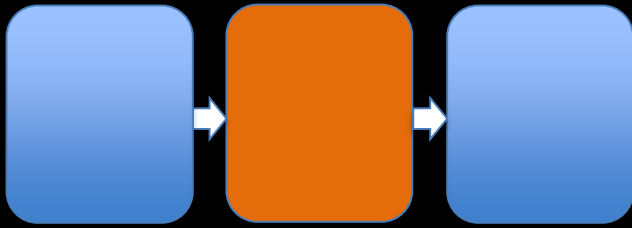
*Boring but essential*



## *Coping Strategy #2*

Exercising – with partner Agencies  
if possible

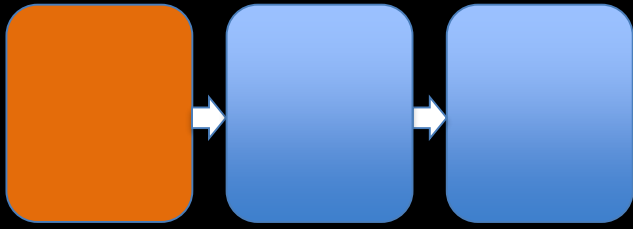
*Practise makes perfect*



*Coping Strategy #3*

24 \* 7 Roster

*May need 5 – 10 people on each of 3 shifts*



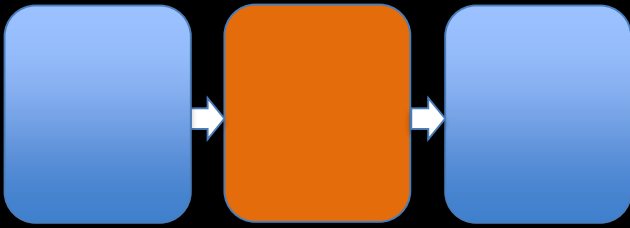
# Sample Roster



## Design advice from Christchurch C.C.

- 10 weeks of response, staff required
- 7am – 11pm, 7 days a week
- Design shifts around supporting situation reports and regular requests
- Overlap shifts so there is time for handover
- Skeleton overnight crew
- Prepare a sample roster/shift structure now
- Ensure all contact numbers are recorded and everyone has a copy

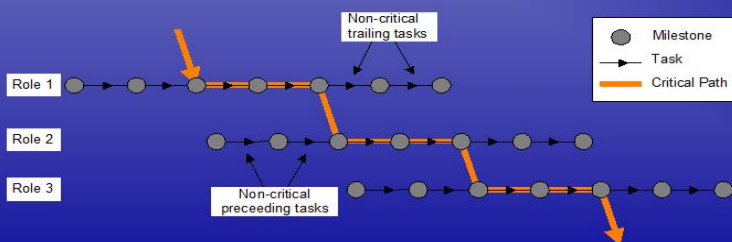


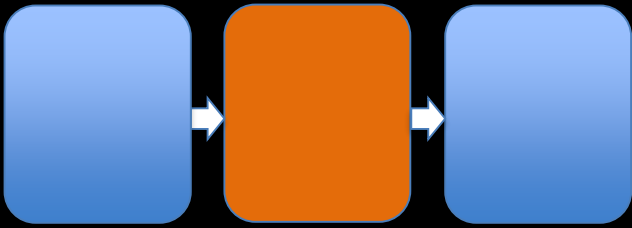


## *Coping Strategy #4*

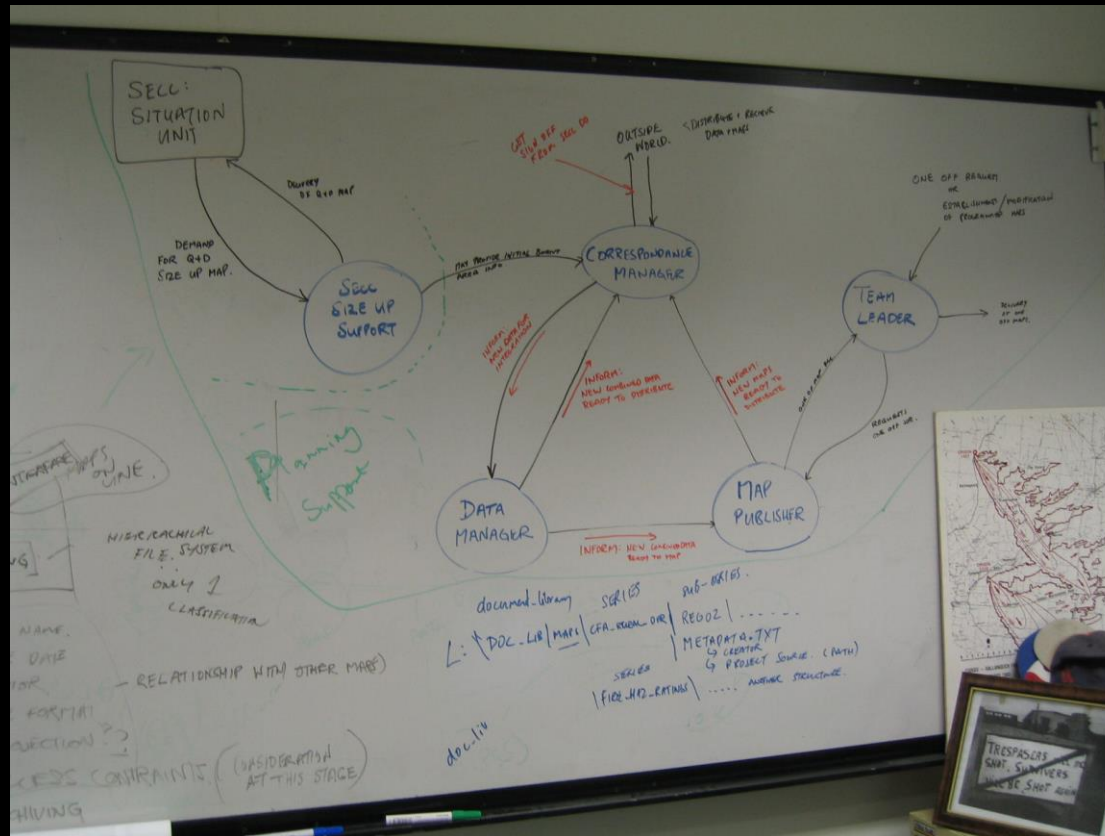
Review team structure during event

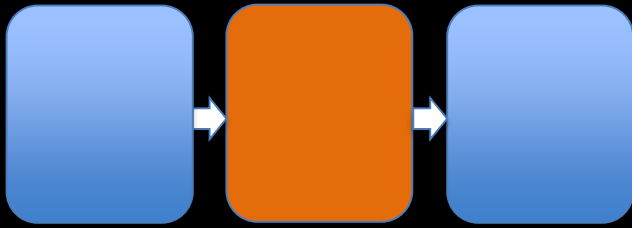
*Manage deadlines, increase efficiency, cater for live R&D*





# Hit the whiteboard: Victorian Alpine Fires 2003



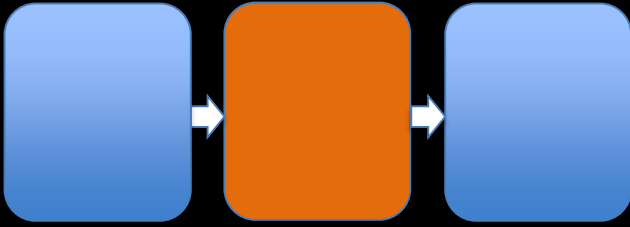


## *Coping Strategy #5*

A practical task/job allocation  
and tracking system

*Guest workers will need to be able to learn and use quickly*

*Will need off site/external access*

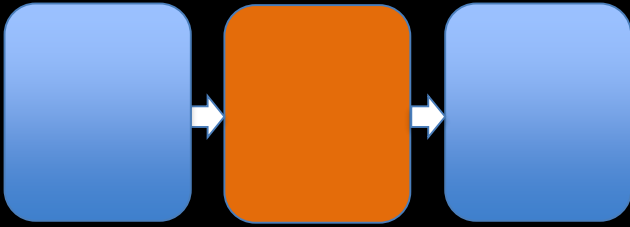


## Sample – Task management: Job request form



- Request ID
- Date/Time stamp
- Description of request
- Customer Name
- Organisation Name
- Email
- Mobile
- Required format for output
- Date and time output required
- Are recurring outputs required
- If paper, how many copies are required
- What size map
- Is the data sensitive
- If yes, Approval to release
- Assigned to
- Due by
- Completed At
- Reviewed By
- Filed in (location of completed request)
- Comments

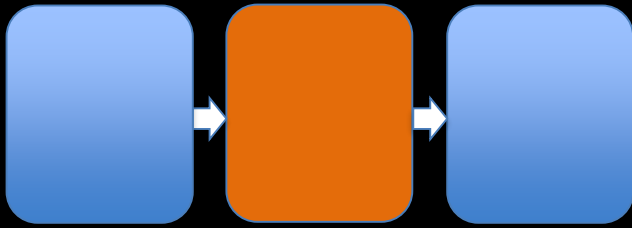




## *Coping Strategy #6*

# ICT support

*Guest passwords, remote software installs, large files, heavy network traffic, access to external Agencies (Google/Dropbox), Server management, plotters, etc, etc*

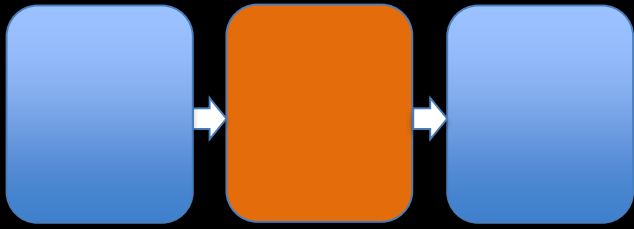


## *Coping Strategy #7*

More people and virtual networks

*You will need extra capacity ..*

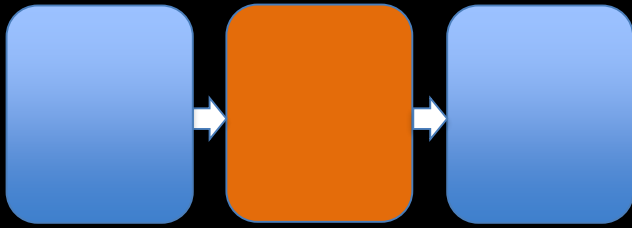
*Partner agencies, professional societies, Corporates,  
Universities, Volunteer Technical Communities*



# Citizen Volunteers

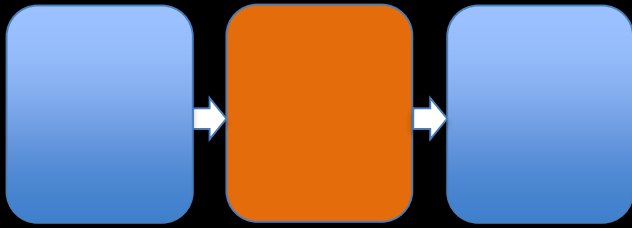
## Examples:

- Crisis Mappers (<http://crisismappers.net/>)
  - GIS Corps (<http://www.giscorps.org>)
  - TomNod (Digital Globe)

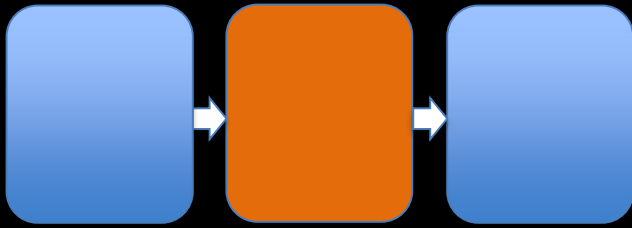


A good  
reference:  
How to  
engage  
with VTCs





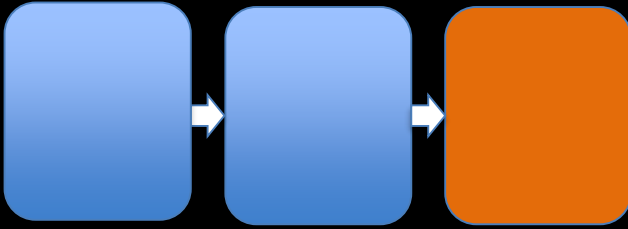
*E.g. Me mapping damaged properties from Cyclone Marcia, Qld, Au*



## *Coping Strategy #8*

# Stress management

*Regular team meetings, share team photos, public recognition, emails, phone calls, psychological support, continually re-inforce value of work*



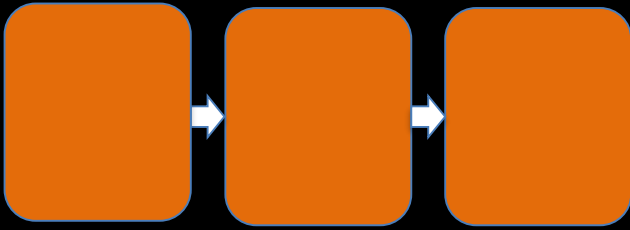
## *Coping Strategy #9*

# Good document storage

*Inquiries, reviews, research, class actions*



*The Age: "Two key maps predicting path of blaze go missing"*



## *Coping Strategy #10*

Do whatever it takes to get the job done



*In Afghanistan, circa 2010, an NGO had great difficulty transferring spatial data as all normal means of transmission were slow or non-existent.*

*They used USB sticks on-board Carrier Pigeons to get their data from one system to another.*

*They got the job done.*





## Four things about this presentation ...

This is "*my*" list .. every GIS team needs their own list tailored for local circumstances

There are no capital costs required to implement these strategies .. just good management

Once a crisis hits you will be dragged along by a tsunami of stuff to do .. only preparation will determine whether you have a life-buoy handy

People are the most important resource

## *Crisis Management for Spatial Teams*



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