

**I COME FROM THE LAND OF THE GAANGALU NATION AND LANDS OF THE IMAN PEOPLE, WULLI WULLI PEOPLE, WADJA PEOPLE, WAKKA WAKKA PEOPLE AND DARUMBAL PEOPLE.**

**I ACKNOWLEDGE THAT WE ARE MEETING ON THE TRADITIONAL COUNTRY OF THE KAURNA PEOPLE OF THE ADELAIDE PLAINS AND PAY RESPECTS TO ELDERS PAST AND PRESENT.**

**I RECOGNISE AND RESPECT THEIR CULTURAL HERITAGE, BELIEFS AND RELATIONSHIP WITH THE LAND.**

**I ACKNOWLEDGE THAT THESE ARE OF CONTINUING IMPORTANCE TO THE KAURNA PEOPLE LIVING TODAY.**

**I ALSO EXTEND THAT RESPECT TO OTHER ABORIGINAL LANGUAGE GROUPS AND OTHER FIRST NATIONS WHO ARE PRESENT TODAY.**

# SPATIAL NIRVANA: FROM CELLULOSE TO ELECTRONS

A brief explanation of the journey undertaken by the Banana Shire Council (BSC) GIS unit  
in support of the Local Disaster Coordination Centre (LDCC)  
transitioning from paper spatial products  
to a digital spatial tool for undertaking spatial queries supporting  
LDCC activities during emergency events  
and immediately  
displaying the results to the LDCC.



# Banana Shire Overview

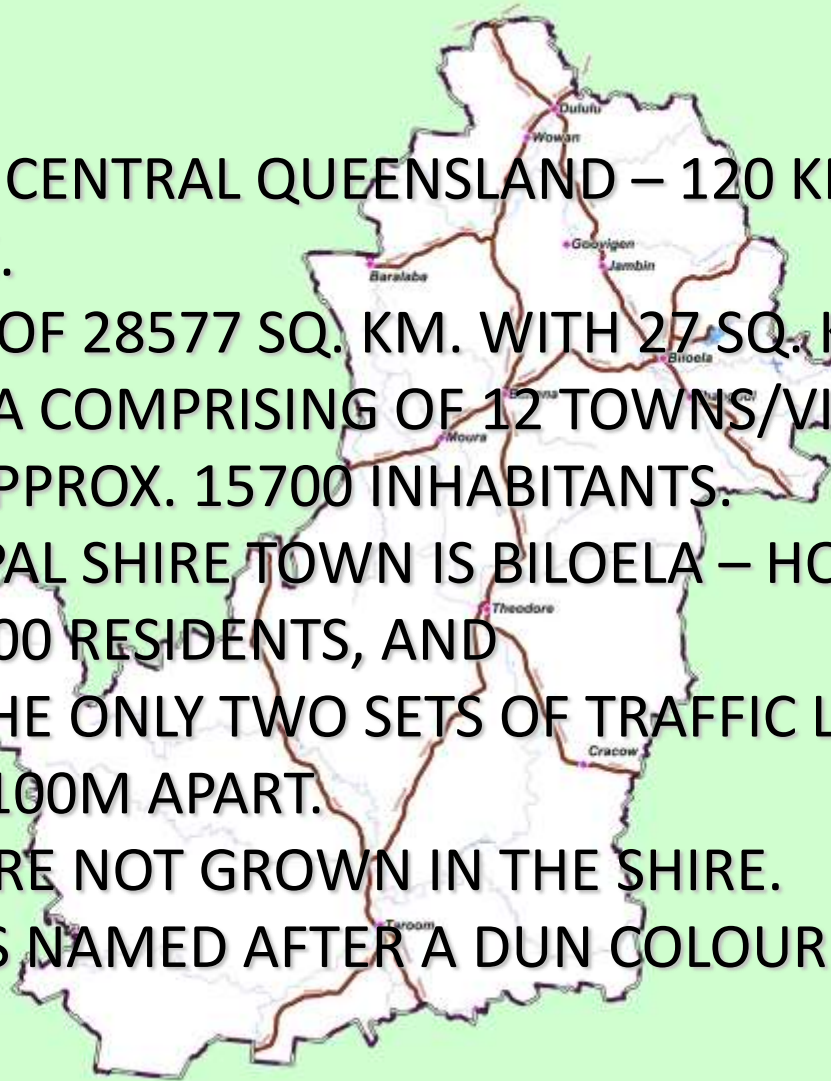
LOCATED IN CENTRAL QUEENSLAND – 120 KM WEST OF GLADSTONE.

LAND AREA OF 28577 SQ. KM. WITH 27 SQ. KM. OF URBAN AREA COMPRISING OF 12 TOWNS/VILLAGES. HOME TO APPROX. 15700 INHABITANTS.

THE PRINCIPAL SHIRE TOWN IS BILOELA – HOME TO APPROX. 5300 RESIDENTS, AND HOME TO THE ONLY TWO SETS OF TRAFFIC LIGHTS IN THE SHIRE, 100M APART.

BANANAS ARE NOT GROWN IN THE SHIRE.

THE SHIRE IS NAMED AFTER A DUN COLOURED STEER



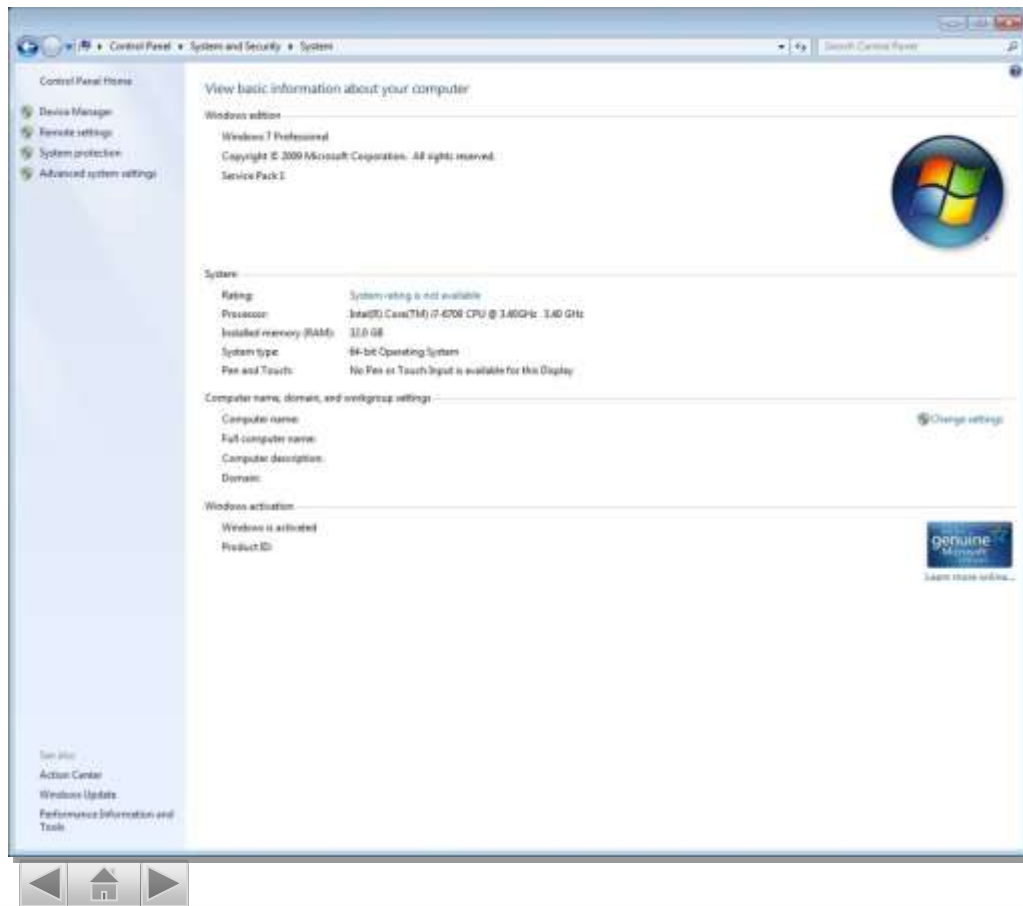
**Scope: To replace the existing LDCC paper spatial products with a digital spatial capability**

- 
- 1. IDENTIFIED THE NEED TO RETIRE THE OUT OF DATE PAPER PRODUCTS USED BY THE LDCC TO;**
    - A. IDENTIFY RISKS, PLAN FOR AND MANAGE RESPONSES TO DISASTER EVENTS.**
    - B. TO ASSIST IN UNDERTAKING EVENT MITIGATING ACTIONS AND**
    - C. POST EVENT RECOVERY ACTIVITIES.**

**THESE MAPS WERE STORED ROLLED UP IN A METAL TRUNK.**

- 2. CREATE A DIGITAL TOOL FOR USE BY THE LDCC TO APPLY SPATIAL QUERIES TO IDENTIFY AND UNDERSTAND EVENT RISKS AND ISSUES.**

# Objective: Develop and install a spatial tool for LDCC spatial analytical activities



A. PURCHASE A GIS WORKSTATION FOR LDCC USE (SPECIFIC PROCESSOR, RAM AND GRAPHICS CARD REQUIREMENTS) – THE STANDARD CORPORATE LAPTOP WITH ONLY 4GB OF RAM WAS NOT CAPABLE OF PERFORMING THE SPATIAL TASKS REQUIRED.



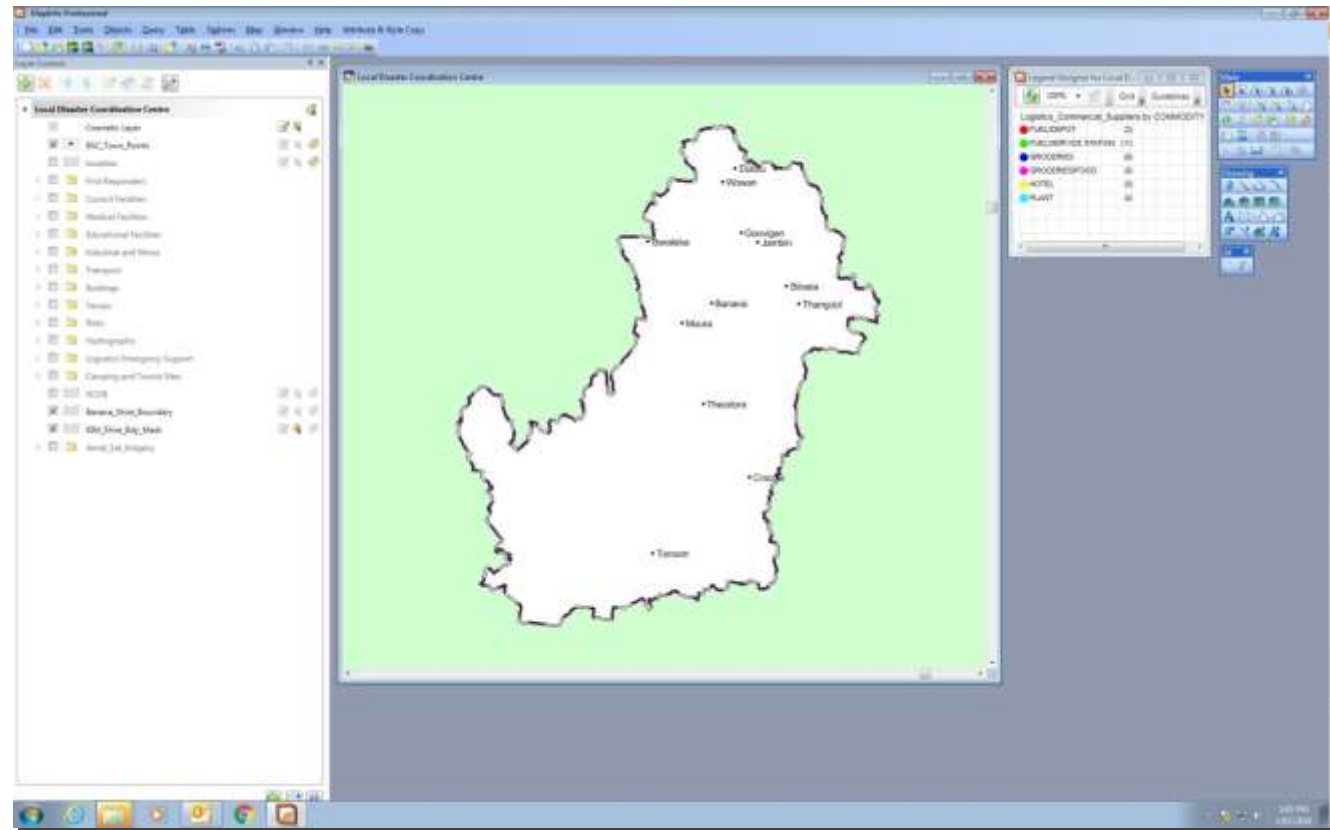
## IN ADDITION

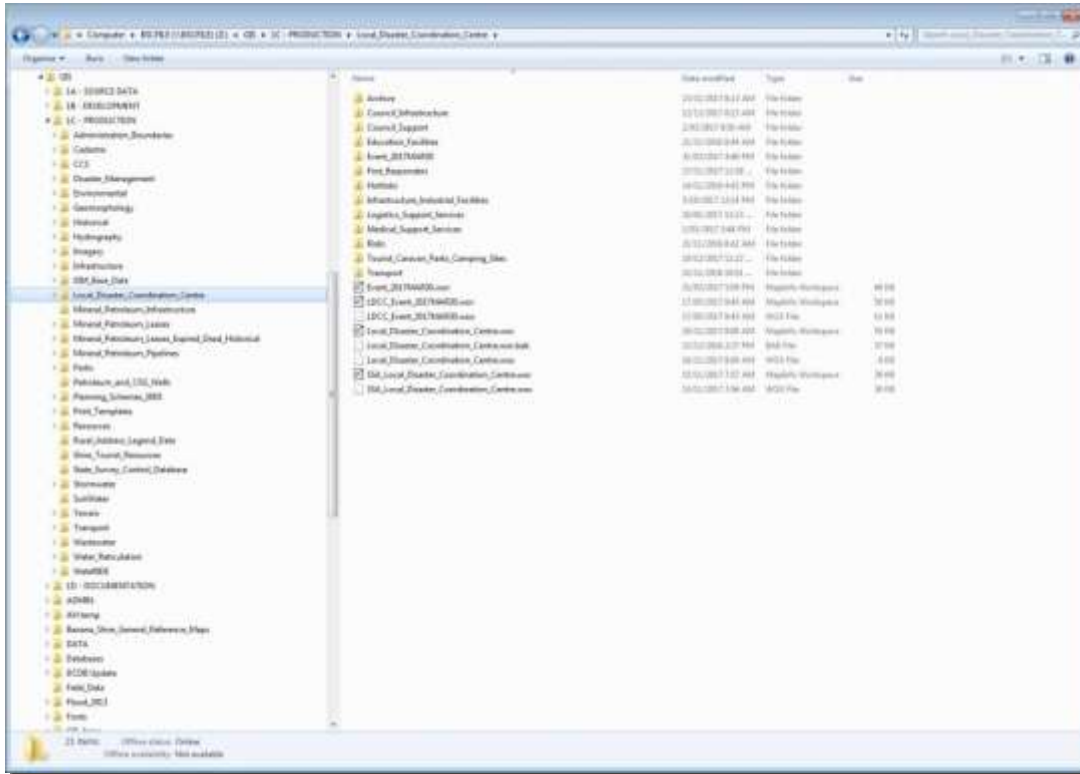
A LARGE SCREEN TV WAS PURCHASED AND MOUNTED ON THE LDCC WALL TO ENABLE ALL MEMBERS OF THE LDCC (AROUND 15) TO VIEW THE SPATIAL DATA AND ANY SPATIAL QUERY RESULTS.



B. CREATE A SINGLE  
LDCC MAPINFO  
WORKSPACE WITH  
ALL THE REQUIRED  
SPATIAL DATA NEEDED  
FOR ANY LDCC  
SPECIFIC SPATIAL  
QUERIES.

CONCURRENTLY  
WITH  
C.





C. CREATE THE DATA SETS TO BE USED BY THE TOOL – CURRENTLY 37 LDCC SPECIFIC DATA SETS HAVE BEEN CREATED, BUT NOT COUNTING THE ORIGINAL CORPORATE DATA SETS USED AS BASE LAYERS.

THE ORIGINAL PAPER PRODUCT DATA CONSISTED OF BASIC INFORMATION;  
A RANGE OF BSC DATA – ROADS, SEWER AND WATER RETICULATION  
INFRASTRUCTURE  
AND  
SOME GEOSCIENCE AUSTRALIA AND STATE DATA – 10M CONTOURS SHIRE  
COVERAGE AND LANDING FIELDS



# The Spatial Tool



THE BSC CORPORATE DESKTOP SPATIAL SOLUTION  
IS PITNEY BOWES MAPINFO PROFESSIONAL.

THE LDCC MAPINFO INSTALLATION IS A VERSION 12  
EXAMPLE  
RUNNING ON A 64-BIT WINDOWS OS WITH AN I7  
PROCESSOR AND 32GB OF RAM.

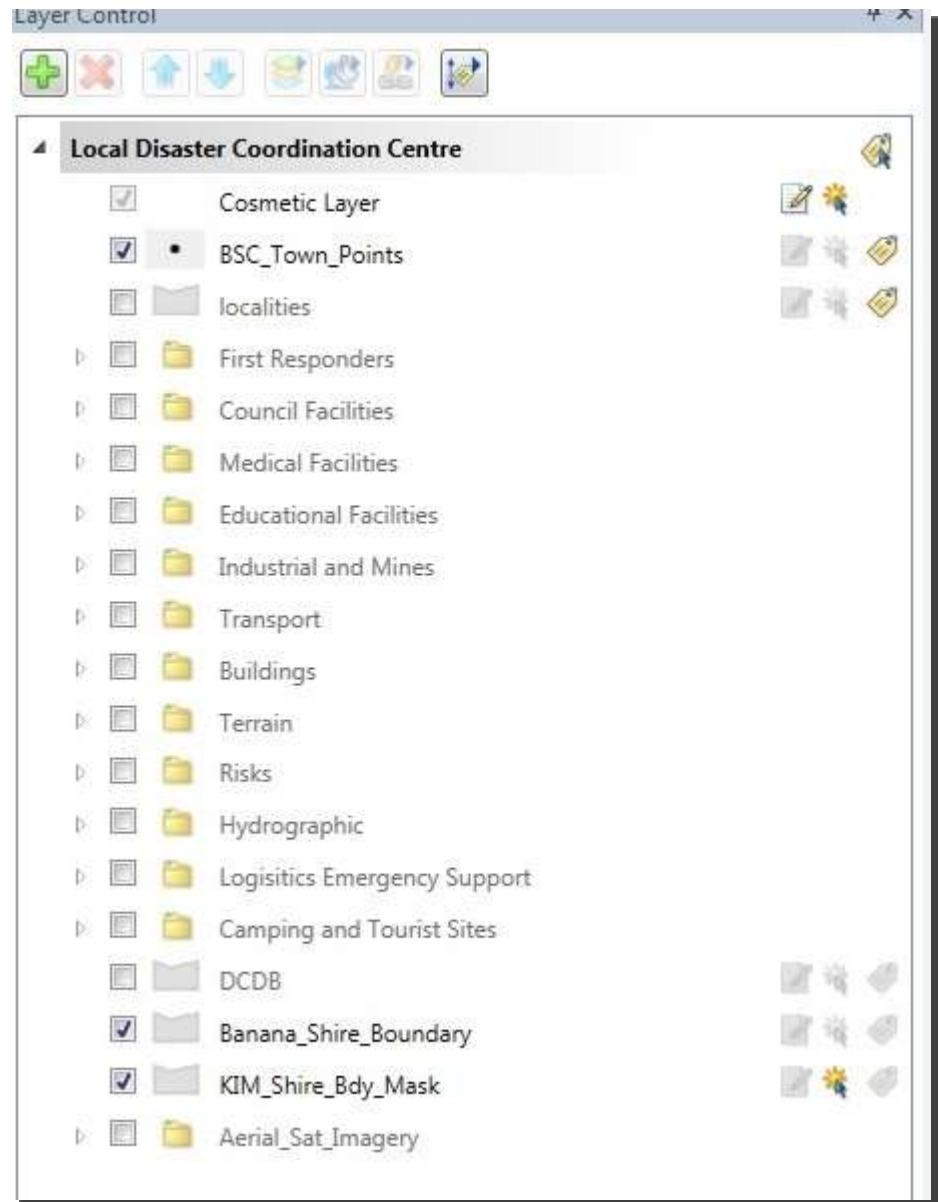
A MAPINFO WORKSPACE WAS CREATED THAT CONTAINS  
ALL THE LDCC SPECIFIC SPATIAL DATA

A RANGE OF BASE DATA – SHIRE BOUNDARY, TOWNS  
WITH LDCC SPECIFIC DATA GROUPED UNDER LOGICAL HEADINGS:  
FIRST RESPONDERS, COUNCIL FACILITIES, MEDICAL FACILITIES  
EDUCATIONAL FACILITIES, INDUSTRIAL AND MINES, TRANSPORT  
BUILDINGS, TERRAIN, RISKS  
HYDROGRAPHIC, LOGISTICS EMERGENCY SUPPORT  
CAMPING AND TOURIST SITES

ALL DATA ARE EITHER POINTS, LINES OR POLYGONS.

POINT FEATURES,  
INDICATING THE LOCATIONS OF,  
INCLUDE;  
FIRST RESPONDERS:  
POLICE STATIONS  
AMBULANCE STATIONS  
FIRE STATIONS AND  
SES.

COUNCIL FACILITIES:  
EVACUATION CENTRES  
DEPOTS  
COMMUNICATIONS INFRASTRUCTURE

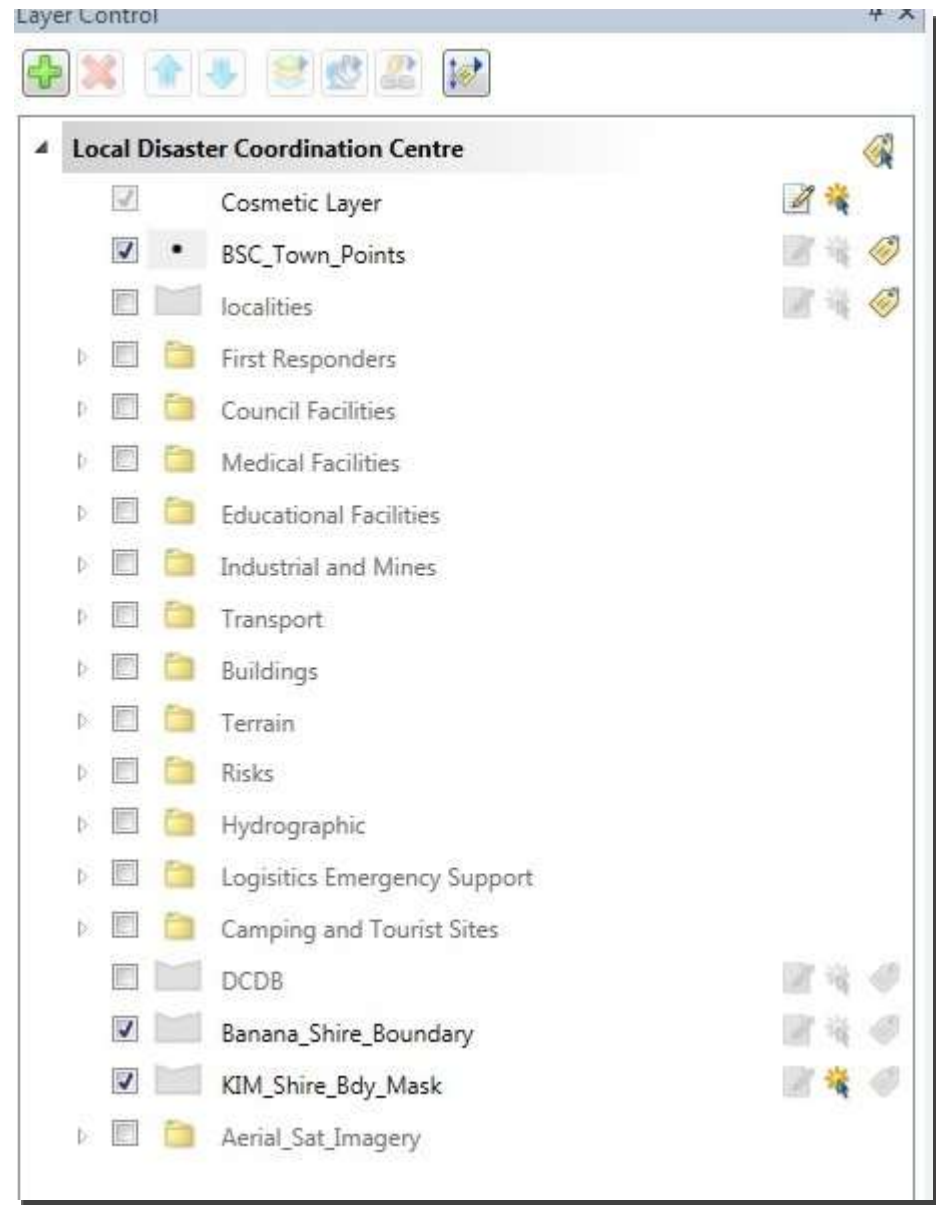


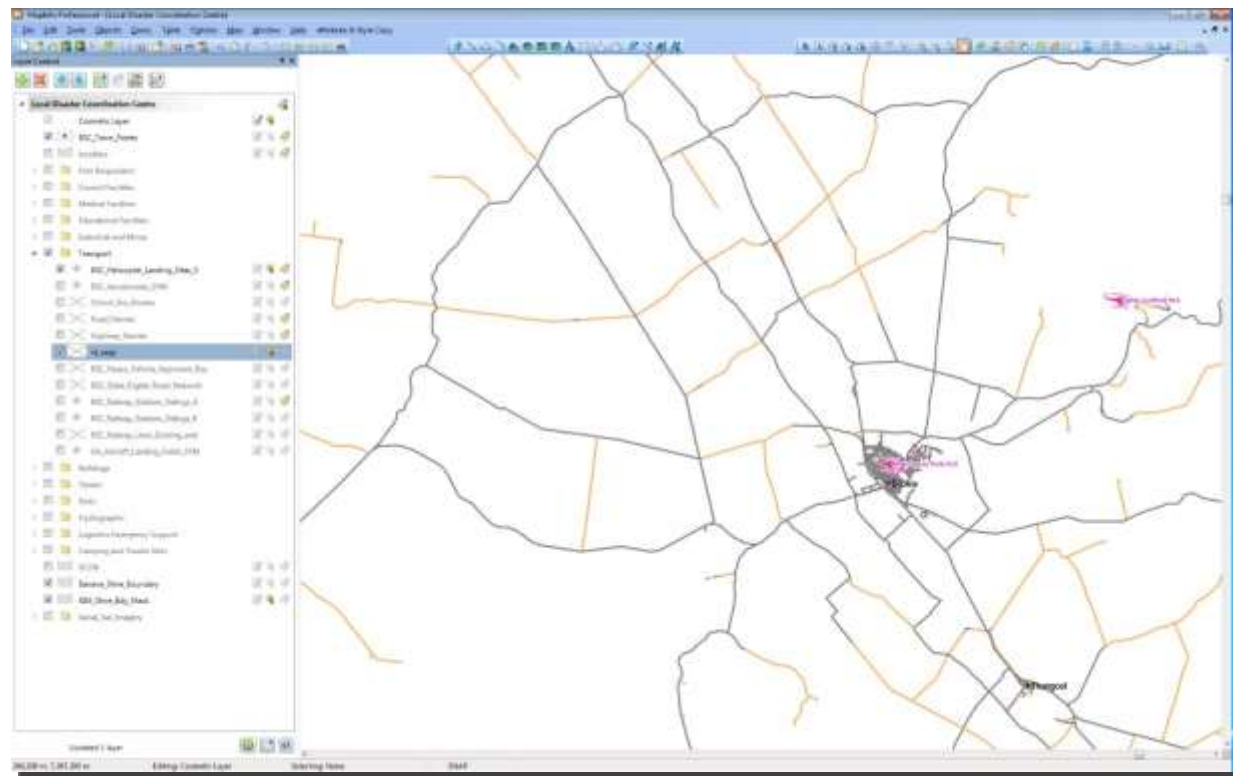


MEDICAL FACILITIES:  
HOSPITALS

EDUCATION FACILITIES:  
PRIMARY SCHOOLS  
SECONDARY SCHOOLS  
CQ UNIVERSITY STUDY CENTRE/TAFE

INDUSTRIAL AND MINES:  
CALLIDE POWER STATION  
QLD NITRATE FACILITY  
COTTON GIN  
SEVERAL LARGE OPEN CUT COAL MINES  
- COAL FOR EXPORT AND  
POWER STATION SUPPLY  
CRACOW GOLD MINE





#### Helicopter Landing Site Directory – Rockhampton

From 2000 Area 1  
Version 2.0 - January 2007

**JAYR**  
JAYR & SONS  
2000 07 400 001 000  
0754 001 001 000

Place Name	UTM Northing	UTM Easting	UTM Zone	UTM Datum	UTM Spheroid	UTM Datum	
Biloela Sports Fields	111.00	100.00	501.00	1958	27900.0	603.0	
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**Location Map**  
Map showing the location of the site relative to the surrounding area. The map includes a scale bar and a north arrow.

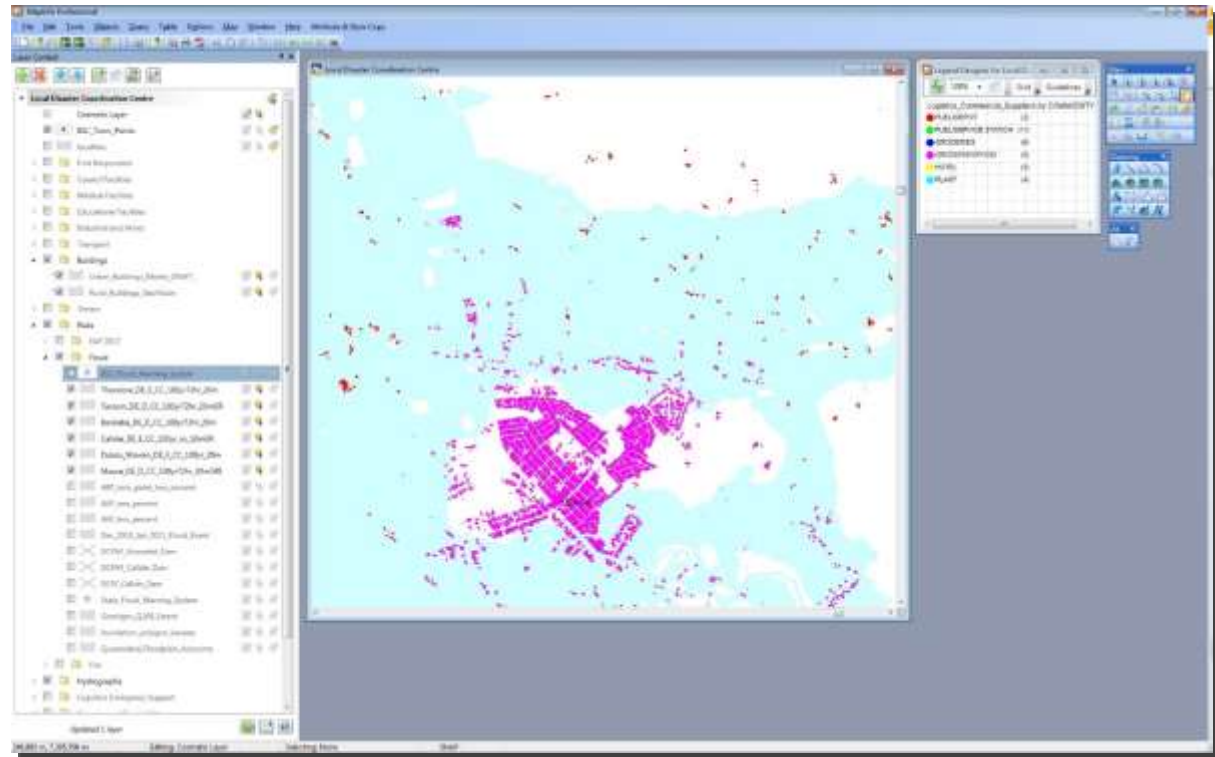
**Local Area Context**  
Via Capone or Rocky Road Hangar south hand.  
From the flood lights can be turned on for night operations. This HEL site also contains information on local industrial sites. The local radio has portable lights.



TRANSPORT:  
ROADS  
RAILWAY NETWORK  
AIRPORTS  
HELICOPTER LANDING SITES  
- WITH HOTLINK TO HLS DESCRIPTIONS

BUILDINGS:  
GEOVISION  
BUILDING POLYGONS  
URBAN AND RURAL  
TWO DIFFERENT ELEVATION  
ATTRIBUTE SETS

TERRAIN:  
CONTOURS  
VARIOUS DATA SETS  
10M WHOLE SHIRE COVERAGE  
INDIVIDUAL TOWNS AT 1M

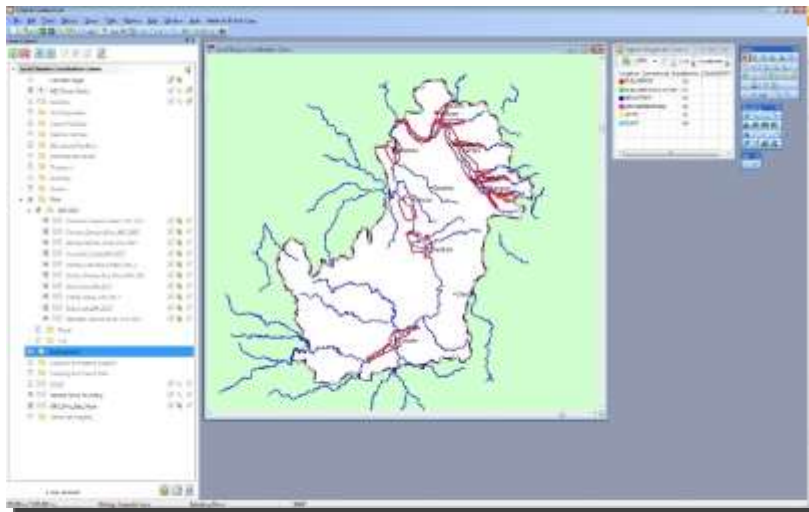
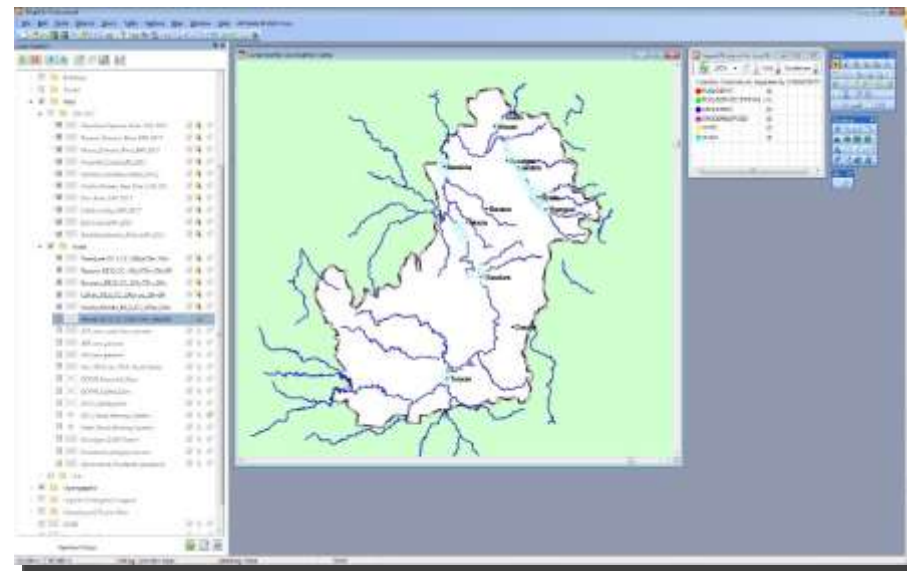




## RISKS:

MINIMAL FIRE, EARTHQUAKE OR  
LANDSLIP RISK.

MAJOR IMPACTS FROM FLOOD EVENTS  
EITHER FROM RIVERINE - DAWSON, DEE  
AND DON RIVERS, CALLIDE CREEK AND  
TRIBUTARIES OR CALLIDE DAM OVERFLOW  
IMPACTING DOWNSTREAM COMMUNITIES

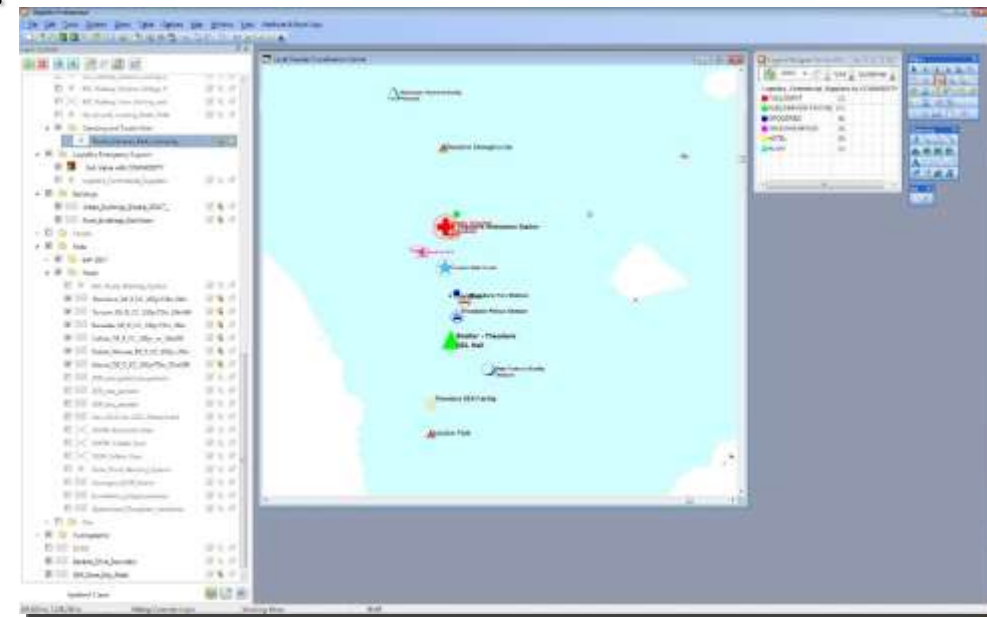
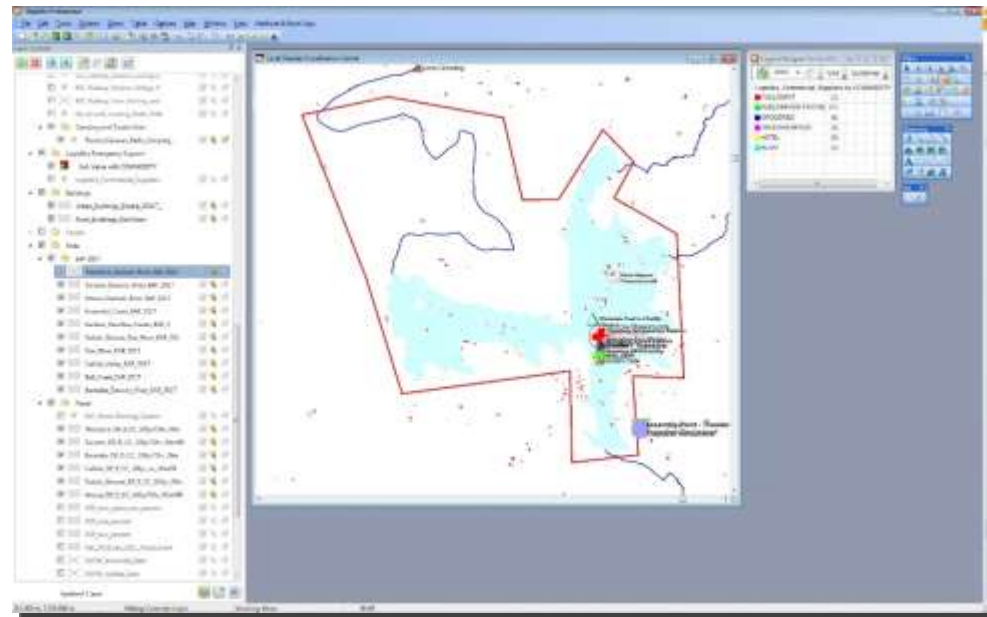


MAJOR FLOOD STUDY COMPLETED  
WITH RESULTANT  
DEFINED EVENT MODEL POLYGONS  
THESE MODEL EXTENTS USED TO CREATE  
EMERGENCY ALERT POLYGONS (EAP)  
FOR RESIDENT WARNINGS  
BY TEXT MESSAGE  
NOTIFICATION FROM STATE

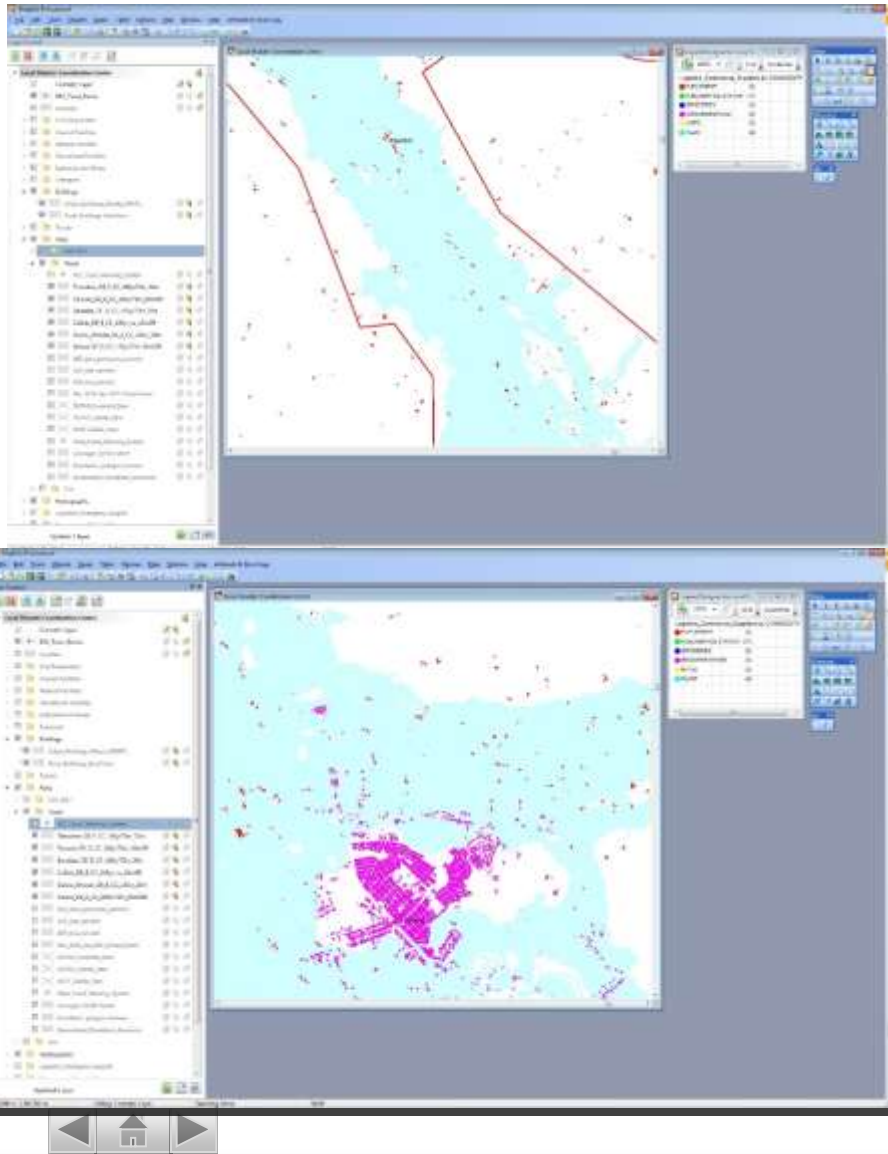
# THEODORE: DEFINED FLOOD EVENT POLYGON BUILDING POLYGONS POINT FEATURES

Image below:

December 2010 - For the first time in Queensland history, an entire town was evacuated when Theodore flooded.  
Photo Daryl Wright

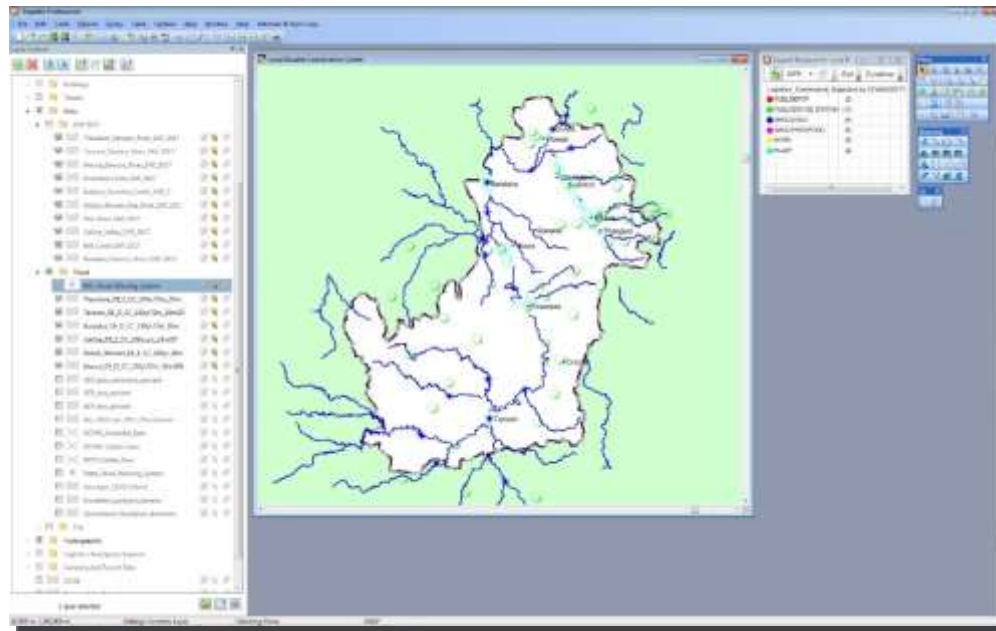


NOW USING THE PITNEY BOWES  
GEOVISION PRODUCT,  
SPATIAL QUERIES ON HOW  
MANY BUILDINGS MIGHT BE  
IMPACTED,  
AND THEREFORE PEOPLE,  
BY A DEFINED EVENT,  
CAN NOW PROVIDE AN ACCURATE  
ANSWER





WaterRIDE IS COUNCIL'S TOOL FOR FLOOD MODELING  
AND COUNCIL HAS BEEN INSTALLING ITS OWN RAIN AND RIVER HEIGHT GAUGES  
TO GATHER DATA, AS WELL AS USING DATA FROM EXISTING BOM GAUGES,  
TO PROVIDE ACCURATE REAL TIME DATA FOR THE FLOOD MODELLING TOOL  
SO AS TO PROVIDE RESIDENTS WITH MORE TIMELY WARNINGS  
ON ANTICIPATED FLOOD HEIGHTS



## SPATIAL VISION FOR THE FUTURE

CREATE MORE DATA SETS

EG. POINT FEATURES INDICATING ALL THE KNOWN ROAD FLOODING SITES

3D CAPABILITY

CONVERTING ALL DATA TO SPATIAL OBJECTS IN A SQL SERVER

## WaterRIDE:

waterRIDE is an offering from Digital Enterprise, the digital arm of the independent global advisory firm Advisian.

Advisian is part of the WorleyParsons Group.

waterRIDE is the ultimate Floodplain Management software allowing anyone to manage flood risks easily and visually.

waterRIDE enables you to utilise flooding information to determine the specific impact on you, your community, or your business.

The word waterRIDE is an acronym for water resources integrated development environment, representing the original concept.

waterRIDE has evolved to encompass a number of other fields where visualisation and analysis of time-varying spatial data is relevant.

Whilst access to numerical modelling results remains a key focus, the tools are increasingly being used for presentation of GIS data and parametric models, and for field data capture.

Images courtesy of waterRIDE network

<http://waterride.net/>

## How is it used?



### Flood Data + GIS

Integrate flood history with GIS data sets to deliver powerful insights.



### Time-varying analysis

Understand the behavior and impact of flooding by leveraging time-varying results.



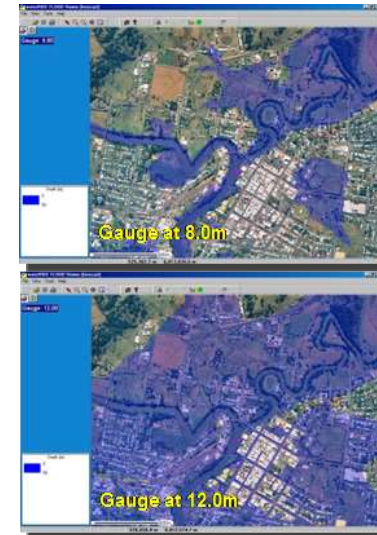
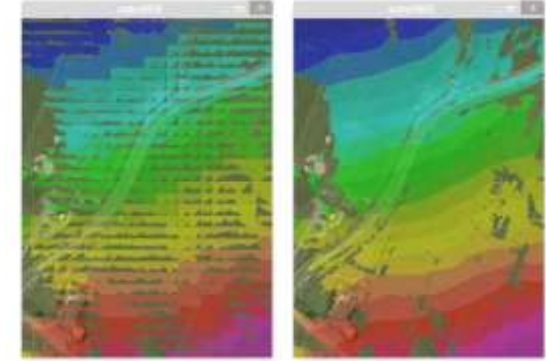
### Complex, simplified

Quickly interpret flood model data, without needing to be a flood modeler.



### Common interface

Replicate the workflow, use a common interface for your results.





## COUNCIL'S LDCC USES THE GUARDIAN SYSTEM FOR DISASTER MANAGEMENT AND INCIDENT MANAGEMENT.

## THE GIS SPATIAL TOOL ASSISTS THE LDCC TO MANAGE ITS RESPONSE.

Guardian:

The Guardian software suite is a QIT Plus company disaster management software and incident management solution.

Guardian Control – Local incident coordination

and

Guardian Disaster Dashboards – Public incident information portal

Images courtesy of QITPlus

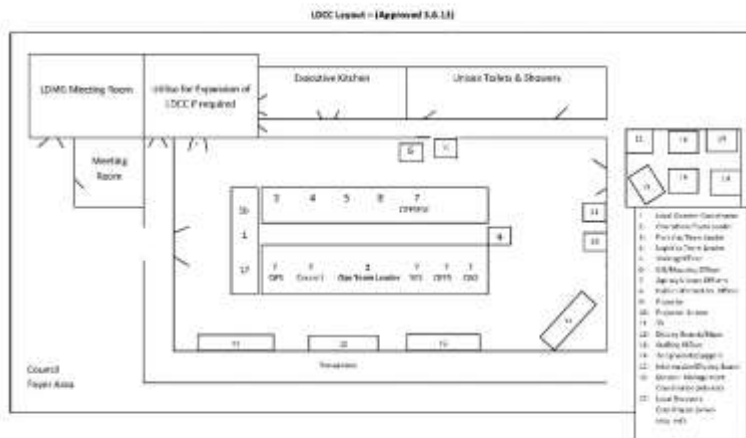
<https://www.qitplus.com/#workProcess>



Banana Shire Council  
Council Chambers

## LDCC CONFIGURATION

Diagram of Local Disaster Coordination Centre  
Activation configuration



Banana Shire Council  
Council Chambers  
Configured for Local Disaster Coordination Centre  
TC Iris Alert activation



## BANANA SHIRE INFORMATION

Banana Shire Council

Disaster Management Dashboard

<http://emd.banana.qitplus.com/>

Images courtesy of Banana Shire Council

Banana Shire Council

Tourism web site

“Sandstone Wonders”

<https://sandstonewonders.com/>



# sandstone WONDERS

