



Planning for a stronger, more resilient Queensland

**Presentation to the World Bank
Integrated flood risk management in Queensland**

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Director, Land Use Planning**

12 December 2011

Presentation Outline

Scale and Scope

Disaster Timeline

Scale and Context of Events

Queensland Reconstruction Authority

Key Projects:-

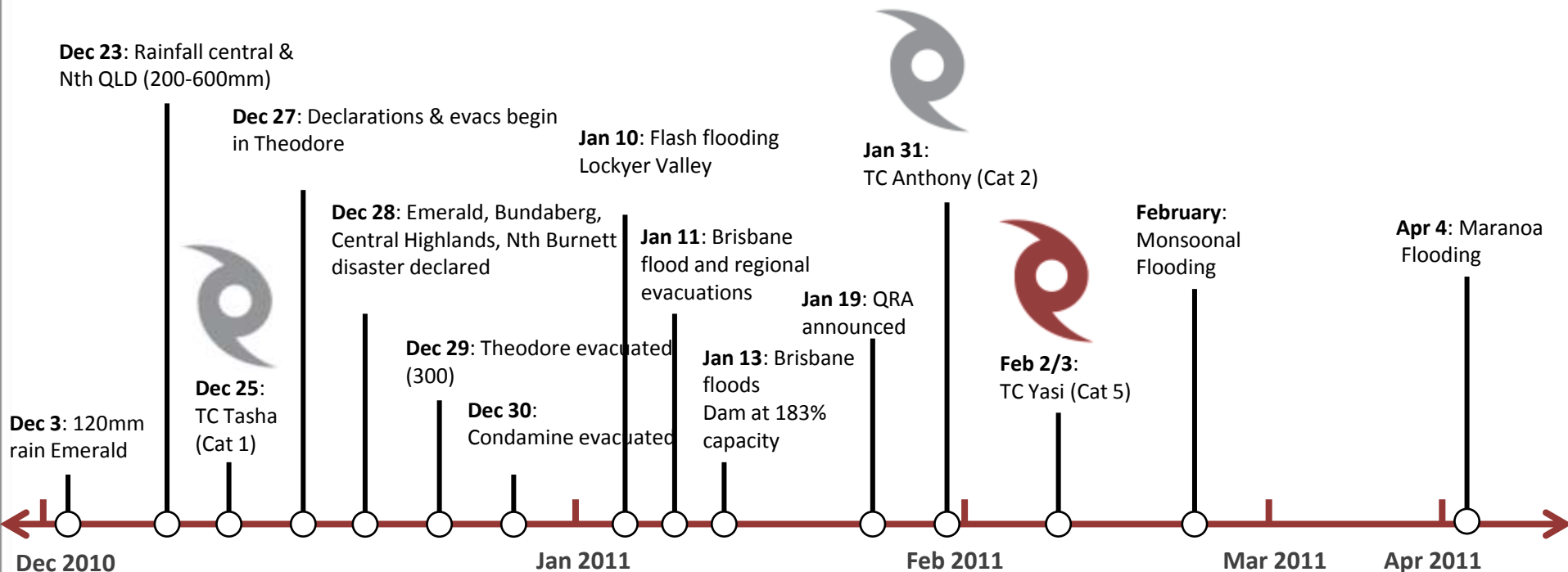
North Queensland

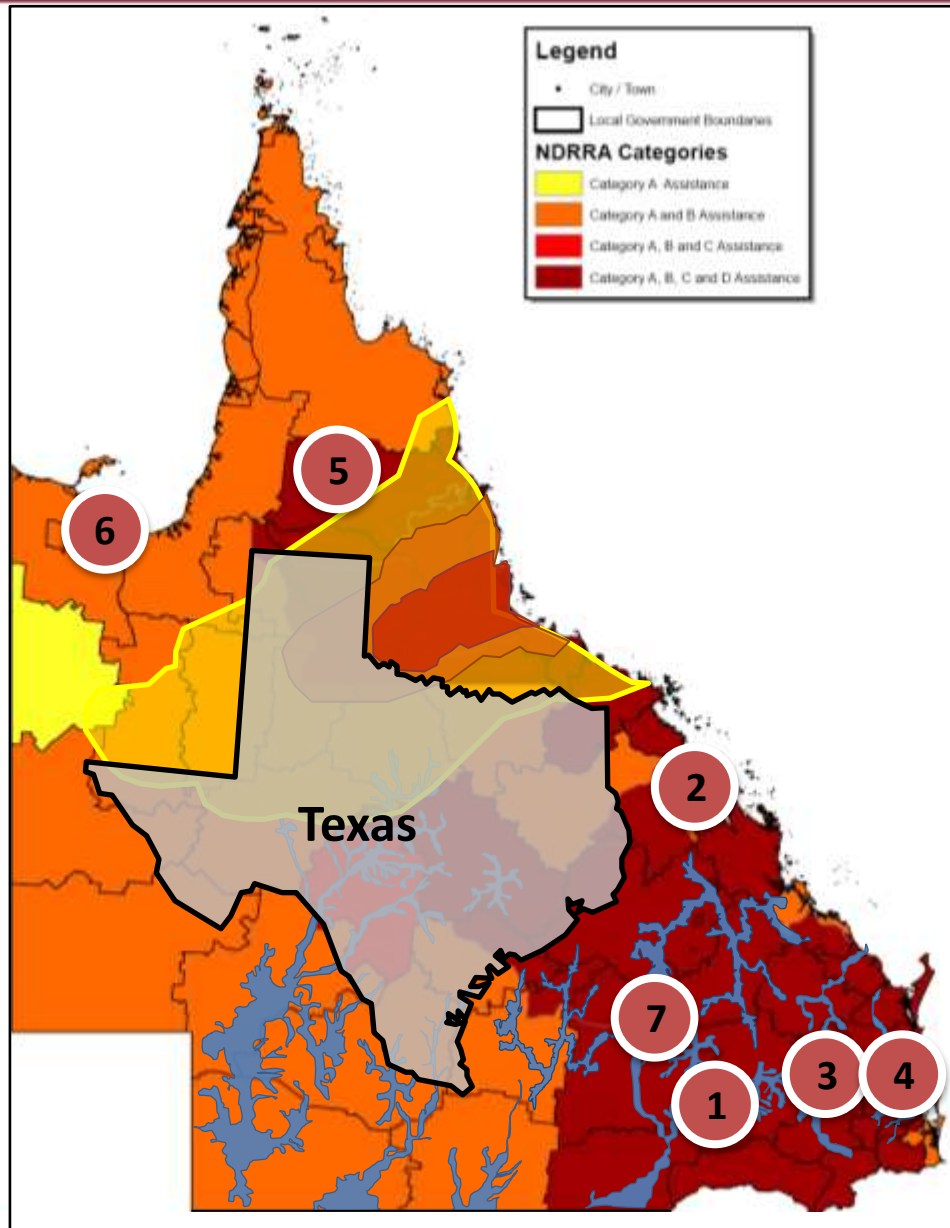
Grantham

Floodplain Management

Key Milestones to Date

Disasters Timeline





Disasters Overview

Disaster Events

- | | |
|------------------|-------------------------------|
| Dec 2010 | Flooding South east/west |
| Dec 2010 | Tropical Cyclone Tasha |
| Jan 2011 | Flash Flooding Lockyer Valley |
| Jan 2011 | Brisbane/Ipswich Flooding |
| Jan / Feb | TCs Anthony & Yasi |
| Feb 2011 | Monsoonal Flooding |
| Apr 2011 | Maranoa flooding |















CYCLONE YASI 2011

CATEGORY 5

LANDFALL: Near Mission Beach, south of Innisfail early morning February 03, 2011.

STORM SURGE: Cardwell 6.5-7m above normal (predicted)

RAINFALL: 1,000mm (predicted)

DAMAGE: Has devastated buildings in Mission Beach, Tully and Cardwell.

DEATH TOLL: 1.

WIND: 290 kph

SIZE: 600km wide.
EYE: 35km wide.



CYCLONE LARRY 2006

CATEGORY 4

LANDFALL: Innisfail area March 20, 2006

STORM SURGE: Clump Point 2.30m; Cardwell 1.76m; Mourilyan 1.34m. Highest inundation recorded was 4.9m above expected tide at Bingil Bay.

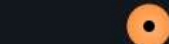
RAINFALL: Gereta Station 436mm (highest recorded); Johnstone River catchment 273mm; Babinda 230mm; Innisfail 289mm (two days after).

DAMAGE: \$1.5 billion to Innisfail and surrounding areas; severe damage to crops.

DEATH TOLL: No fatalities.

WIND: 240 kph

SIZE: 100km wide.
EYE: 25km wide.



HURRICANE KATRINA 2005

CATEGORY 5

LANDFALL: Louisiana, Mississippi, Florida, August 2005

STORM SURGE: Florida 8.2m; Louisiana - highest recorded at St Tammany Parish 4.9m; Mississippi 8.2m.

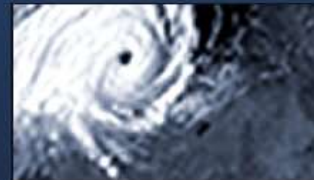
RAINFALL: Louisiana 380mm; Florida 350mm; Mississippi 250mm

DAMAGE: Approx \$US91 billion repair bill; rebuilding process is ongoing.

DEATH TOLL: 1,836.

WIND: 280 kph

SIZE: 640km wide
EYE: 51km wide



CYCLONE TRACY 1974

CATEGORY 4

LANDFALL: Darwin December 25, 1974.

STORM SURGE: Darwin Wharf 1.6m; Casuarina Beach 4m

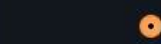
RAINFALL: Darwin recorded 280mm in 24 hours.

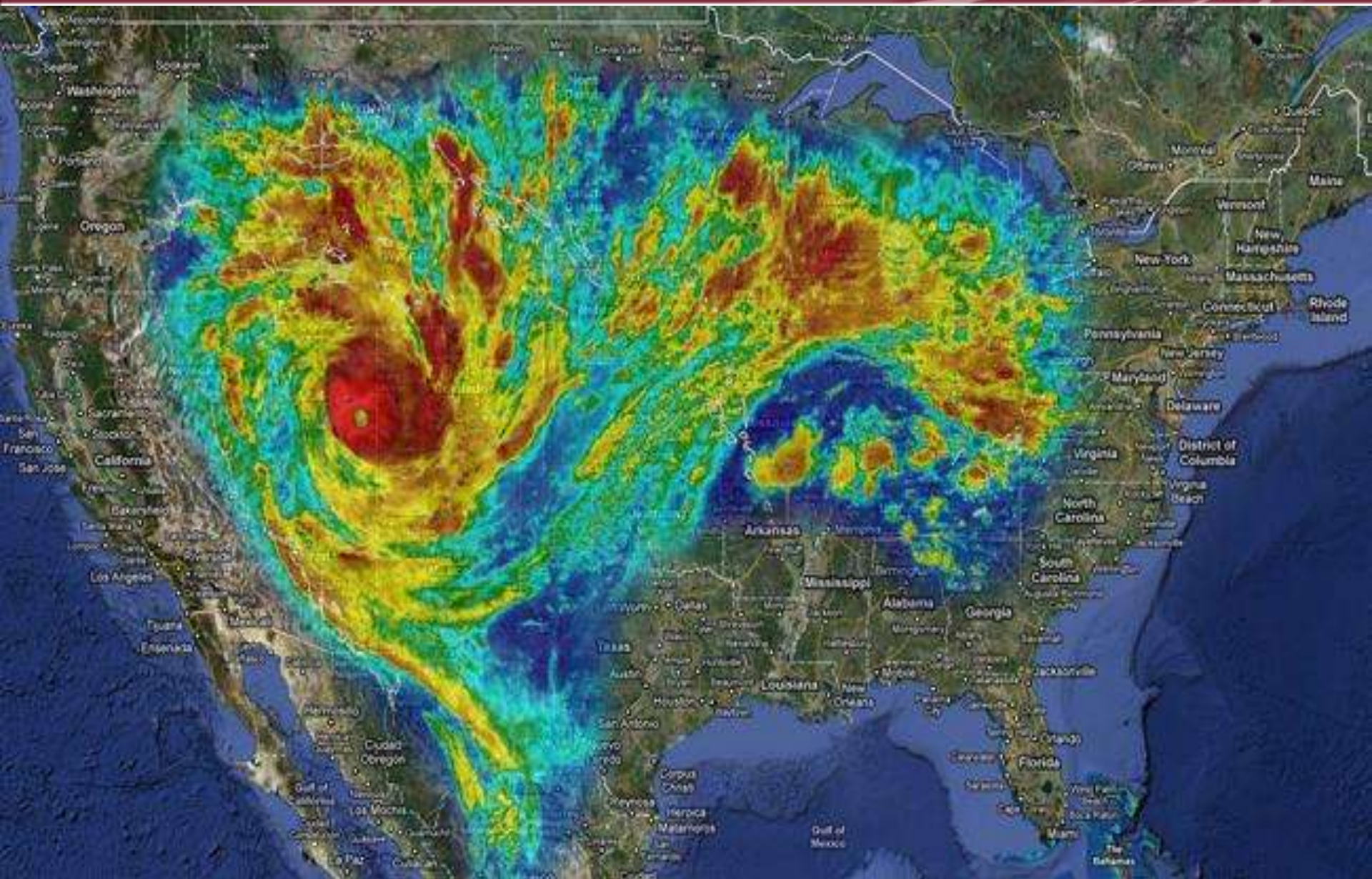
DAMAGE: Over \$800 million repair bill and around 90 per cent of homes destroyed or damaged.

DEATH TOLL: 71

WIND: Gusts of 217 kph recorded before the airport's anemometer was destroyed

SIZE: 50 km wide
EYE: 12km wide







Disaster Comparison

	Cyclone Larry (2006)	Vic Bushfires	Qld Summer
LGAs affected	5 / 73	16 / 79	73 / 73
Communities affected	40	80	210
Estimated Damage	\$1.5b	\$1.2b	\$6.8b
Insurance Claims	\$540m	10 000 (\$1.09b)	124,500 (\$3.6B)
Donated Relief Funds	\$22m	\$392m	\$273m
Houses destroyed	600	2133	7800
Loss of Life	-	173	37



Testing resilience... How to govern in trying times

KEY ELEMENTS TO SUPPORT THE RECONSTRUCTION OF QUEENSLAND

Governance

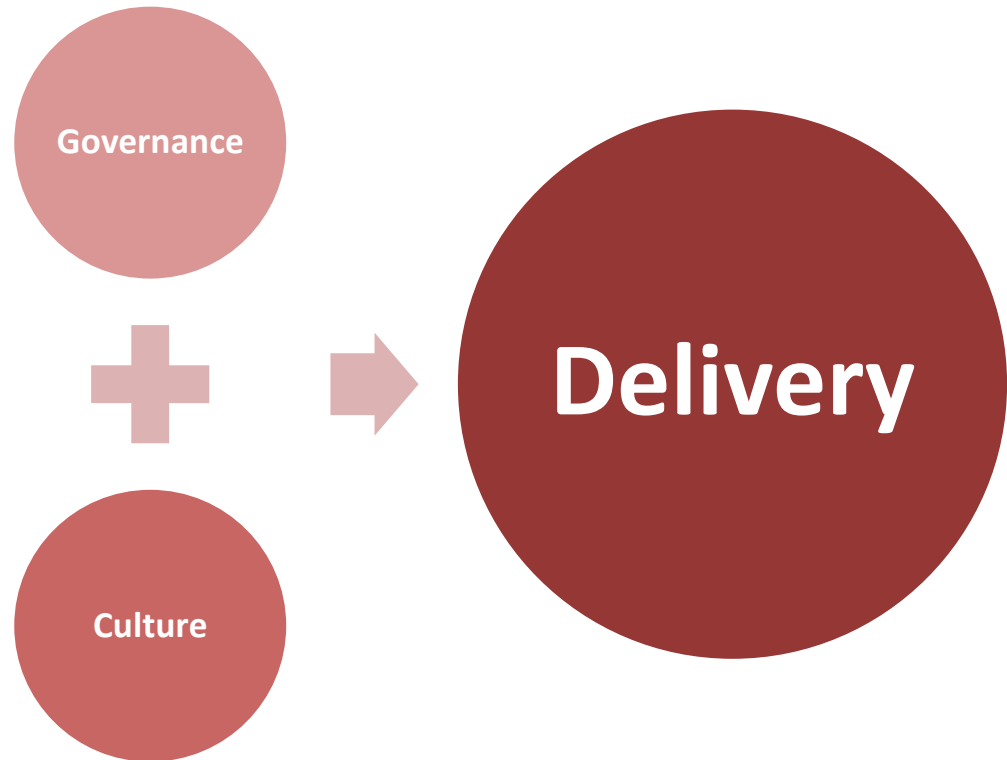
- Legislation
- Organisational structure
- Funding

Culture

- Stakeholder relationships
- Collaboration
- Outcome driven

Delivery

- Delivery of wide range of projects
- Tight timeframes
- Problem solving



Governance...Queensland Reconstruction Authority

... reconnect, rebuild and improve Queensland communities and its economy...

- Legislated 21 Feb 2011
- 2 year sunset clause
- Coordinate reconstruction
- Prioritise infrastructure & services
- Ascertain community needs
- Distribute finance
- Collect information
- Facilitate flood mitigation
- Implement Commission of Inquiry recommendations where needed



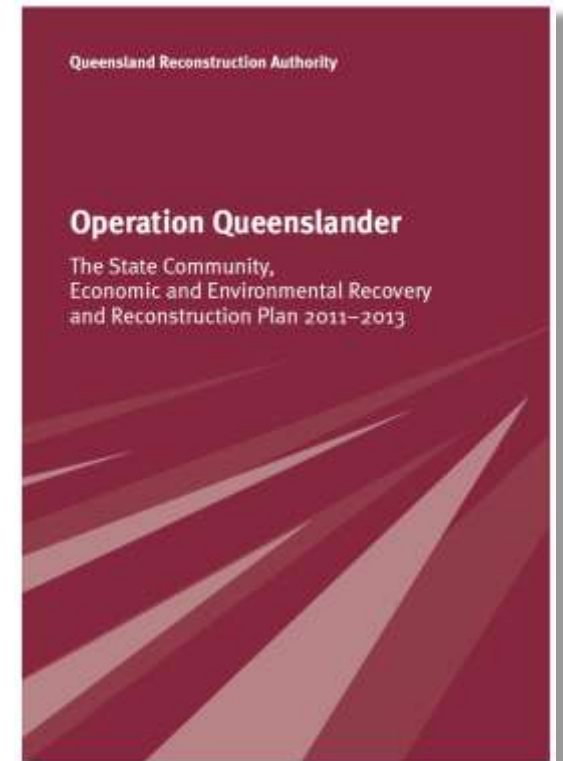
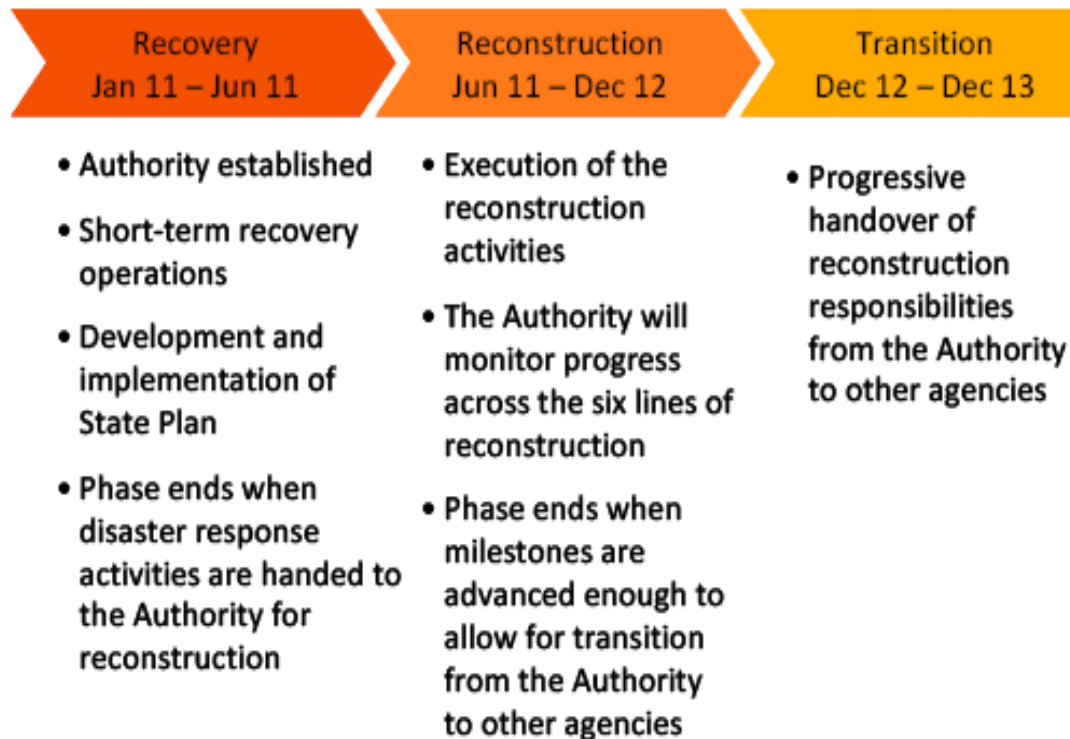
New Chair, Major General Dick Wilson and CEO, Graeme Newton with outgoing Chair Major General Mick Slater

Strategic Objectives

1. Maintain the self-confidence of Queensland
2. Build a resilient Qld & support resilient Queenslanders
3. Enhance preparedness and disaster mitigation

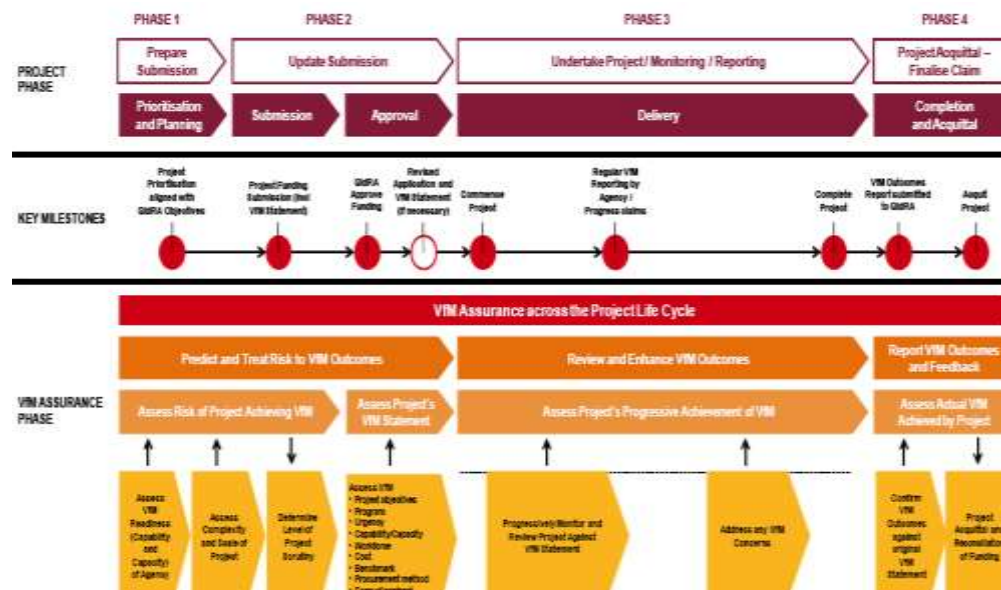
Governance... Operation Queensland: The State Plan

Reconnect, rebuild and improve Qld and its economy

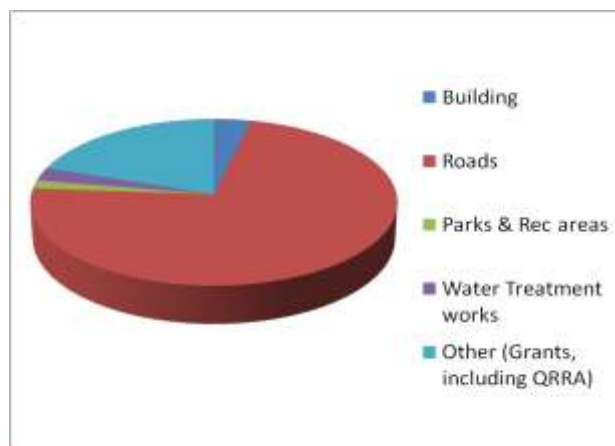


Governance... NDRRA

- New structure to support funding assessment, approval & verification
- Advance payments for works to commence early
- Teams dedicated to LGAs
- NDRRA framework established by Federal Government
- Focus on Value for Money
- Quality Assurance Team
- Efficient submission review and verification process



Reconstruction budget \$6.8B



75% - Federal Government

25% - State Government

Governance... Legislation

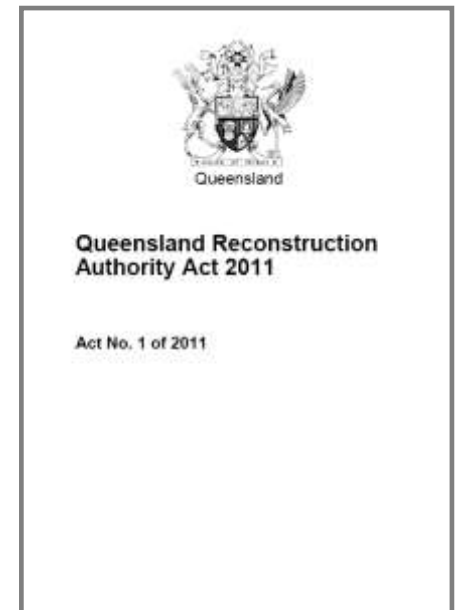
The QldRA was created as a statutory authority through the *Queensland Reconstruction Authority Act* (QldRAA) on 21 February 2011

The QldRAA vests significant powers to respond to disaster events for the purposes of addressing both short term and longer term goals, including:

- declaration of declared projects and reconstruction areas
- powers to compulsorily acquire land
- general powers to enter any land
- powers to create new development schemes
- powers to direct changes to existing planning schemes
- powers to hasten decisions and processes of decision makers

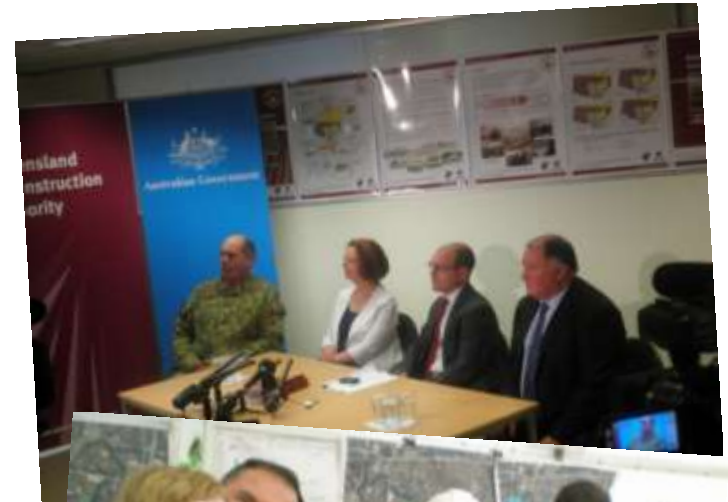
The QldRAA applies to all disaster activated areas

Powers only used when all other avenues have been explored.



Culture.....Resilience

- Governance is one only aspect
- Stakeholder relationships:
Meaningful engagement especially with the community
- Collaboration at all levels of Government:
State agency cooperation is key
- Outcome driven:
Proactive not reactive
- The right staff for the job:
Having the right attitude





“

They came from all walks of life, all communities and nationalities, all occupations, all religious denominations and all ages...

”



“

...some from interstate, others overseas ... armed with shovels, buckets, mops & brooms, hoses, gurneys ...

”



“

... others had utes, trucks and trailers. Builders, plumbers, electricians
... community groups and individuals ... stalls with free food and drinks
... for the days and weeks that followed.

”



“

This sea of humanity whose sole purpose was to aid those in need ... every time I looked up there were new faces ... all asking how they could help...

”



“

And help they did: selflessly, compassionately, generously. It was a sight to behold and something I never expected to see in my home or my neighbourhood.

”

– Neil Ross, Brisbane flood victim

Delivery.... achieving results

Having the right governance systems in place and a positive culture allows for:

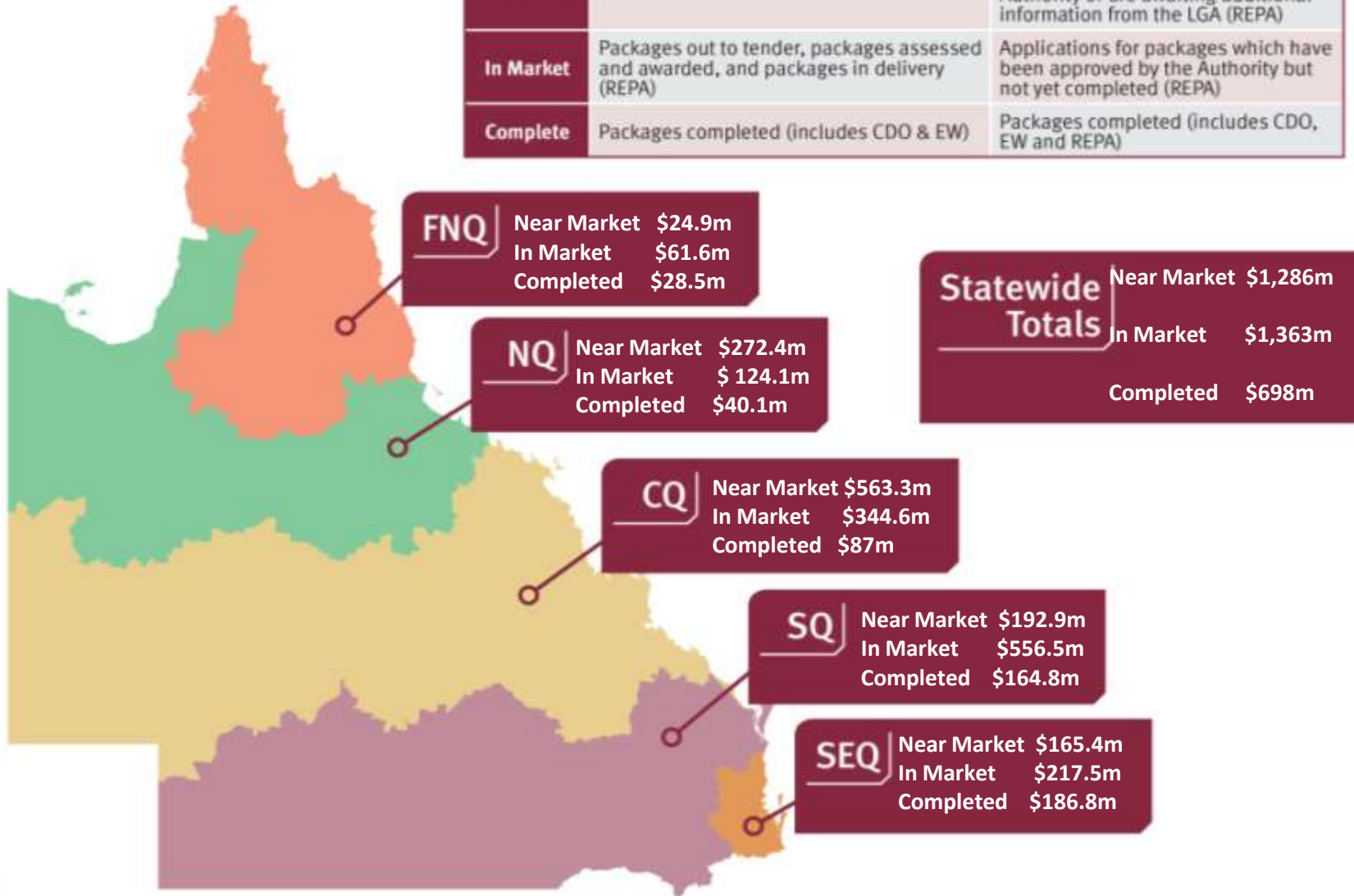
- Delivery of wide range of projects
- In tight timeframes
- Not letting process get in the way of outcomes
- Efficient and effective recovery
- Problem solving (thinking outside the box)

Delivery... The reconstruction effort

	Disaster peak Nov – Mar	Repair as at October 2011
Roads	9170 km	8482km reopened (92%)
Rail	4748 km	4596km operational (97%)
Schools	411	411
Bridges & Culverts	89	89
Water supply schemes	104	104
National Parks	138	126 re-opened
Coal Mines	54	54 operational - 48 operating between 80- 100% capacity - remaining 6 at between 50-80%
Insurance Claims	128 875	
Power outages	480 000	389 still out
Buildings affected	150 000	

Still plenty of work to be done but reconstruction is on track and being delivered in record time

	DTMR	LGA
Near Term	Packages being prepared for tender (REPA)	Applications for packages which are currently under assessment by the Authority or are awaiting additional information from the LGA (REPA)
In Market	Packages out to tender, packages assessed and awarded, and packages in delivery (REPA)	Applications for packages which have been approved by the Authority but not yet completed (REPA)
Complete	Packages completed (includes CDO & EW)	Packages completed (includes CDO, EW and REPA)



89 culverts & bridges with major damage



89 recovered



13.05.2011

4748km rail lines affected



4596km operational





9170 km Roads damaged



8482 km roads recovered







Strategic Works

- Resources for Reconstruction
- Floodplain Management
- Stream Flow Gauges
- Damage Assessment & Reconstruction Monitoring
- Build Back Blitz
- Rebuilding Guidelines
 - Storm-tide prone areas
 - Wind resistant housing
 - Stronger, more resilient electrical infrastructure
- Rebuilding Grantham Together



Delivery... Land Use Planning Team

- Building back better – North Queensland
- Support and drive use of existing mechanisms
- Grantham and Tully Heads/ Hull Heads – priority areas for rebuild
- Ensure no regulatory hurdles to facilitate reconstruction – cut red tape
- Varying responses to different needs – no one size fits all
- Floodplain Management
- Critical Infrastructure – specifically focussed on electrical infrastructure



Build it back better: Resilience planning







Build it back better - North Queensland

Guidelines to support build back better

Part 1: Rebuilding in Storm tide prone areas

Part 2: Wind Resistant Housing

Proposed

Part 3 - Building in low lying coastal areas (mid 2012)

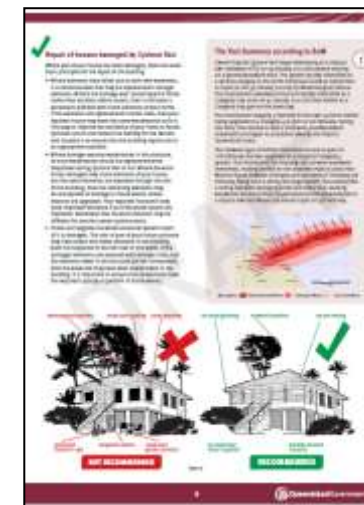


Australian
Institute of
Architects




Guidelines

- Partnered with key cyclone and design experts
- Part 1 - Storm tide – an Australian first
- Practical design solutions
- Plain english/ easy to understand/ visual
- Provide the residents with a greater understanding
- Part 2 – reiteration of what current standards exist
- Understanding hidden damage
- Importance of maintenance especially in pre-80s homes
- Preparation for next cyclone season




Far North Queensland Guidelines in action

Queensland Reconstruction Authority




Planning for a stronger, more resilient North Queensland



Part 1

Rebuilding in storm tide prone areas:
Tully Heads and Hull Heads



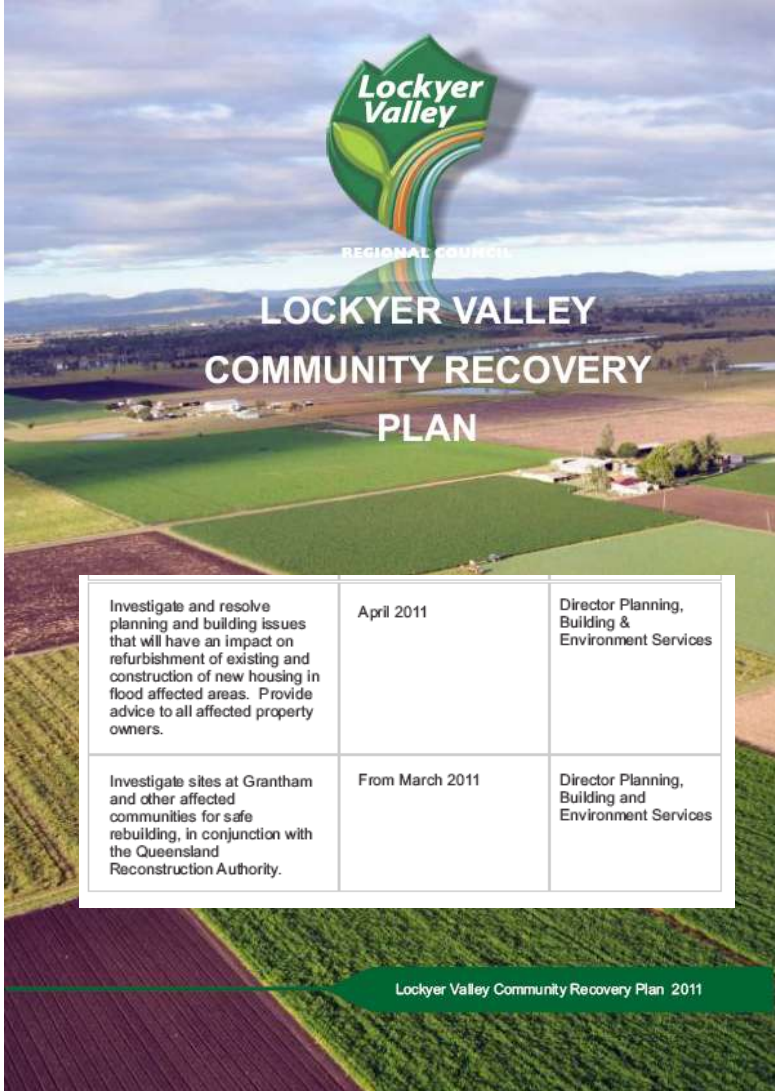
Delivery in action...
Grantham Reconstruction Area





Council's Community Recovery Plan

- **A strong, safe, healthy, self sufficient and responsible community**
- **The Lockyer Valley is the region of choice for vibrant rural living**
- **Bringing the Lockyer Valley together as one**
- **A compassionate and caring community**
- **Modern, robust infrastructure**
- **Comprehensive, whole of region mobile phone coverage**
- **A disaster warning system for the Lockyer Valley**
- **Significant infrastructure vital to grow our regional economy**
- **A sustainable food bowl for Australia**
- **A strong resilient Lockyer Valley Regional Council organisation**



LOCKYER VALLEY
COMMUNITY RECOVERY
PLAN

Investigate and resolve planning and building issues that will have an impact on refurbishment of existing and construction of new housing in flood affected areas. Provide advice to all affected property owners.	April 2011	Director Planning, Building & Environment Services
Investigate sites at Grantham and other affected communities for safe rebuilding, in conjunction with the Queensland Reconstruction Authority.	From March 2011	Director Planning, Building and Environment Services

Lockyer Valley Community Recovery Plan 2011

Community Consultation process

- Number of workshops
- One on ones
- Overwhelming response to stay in Grantham but wanted to feel safe
- Most wanted to move to higher ground
- Reopening key community facilities including the shop
- Strong community will
- Positive engagement process



Grantham Consultation
19 March 2011

Process for declaration s43 of QldRA Act

- Board of Management makes recommendation to Minister for declaration of reconstruction area. ✓
- A regulation (a **declaration regulation**) may declare a part of the State to be a reconstruction area. ✓
- The Minister recommends to Governor in Council the declaration of a reconstruction area by regulation having been satisfied that:-
 - (a) the part of the State has been directly or indirectly affected by a disaster event; and ✓
 - (b) the declaration is necessary to facilitate flood mitigation for affected communities, or the protection, rebuilding and recovery of affected communities. ✓
- The Minister may make the declaration on the Minister's own initiative or at the request of a local government. ✓



On 8 April 2011, the *Queensland Reconstruction Authority Regulation 2011* was created which declared the **Grantham Reconstruction Area**





Grantham Reconstruction Area Timeline



The past and the future...



Vision for Reconstruction Area

It has been two years since the dreadful events of January 2011, and our community of Grantham has rebuilt itself in a way which shows great pride, strength and resilience, while staying true to our history and character and respecting those who suffered during those tragic events.

The main street along Anzac Avenue is thriving again, with the new store, hotel and information centre proudly rebuilt stronger and better. Members of our community and visitors alike have embraced the businesses in the main street as they are more prosperous than ever. The main street is a strong heart to our once again strong community.

The former residential area west of Harris Street is now a park much valued by our community as a place to reflect. Some of the flood-affected areas west along the Giltton-Helidon Road have converted back into rural uses, although a few strong highest houses have been built by those who have chosen to stay and rebuild in the area.

As I enter William Street I notice distinctive and colourful shade structures which are home to weekend fruit stalls and are a hive of activity with residents and visitors buying their weekly produce. There are a few cafes located under the camphor laurels in William Street which are very popular as a meeting place for friends to catch up and share a light meal whilst overlooking the natural areas of Sandy Creek. Passing under the railway line, the restored butter factory sits proudly at the entry to this part of the town and is used every day by different members of the community.

Travelling along Victor Street, I can hear children in the primary school running and laughing and watching as a train passes by. Houses opposite the school are much as they have always been.

The big change is on land north of here, off Gosmore Street, where a major new part of town has been built up nice and high overlooking the cropping lands and flood plain to the south. Just two years on, many of our residents have proudly rebuilt their homes and lives in this part of town. Children can be heard kicking a football and playing on the swings in the new parkland which is central to this new part of town. The road into this new area stitches the community together providing a high level of access for residents and visitors between the main street and the old and new parts of town.

There are many different lot sizes in the new part of town and I know that as I get older, I'll be able to move to a smaller lot and stay close to my family without leaving the town that I know and love.

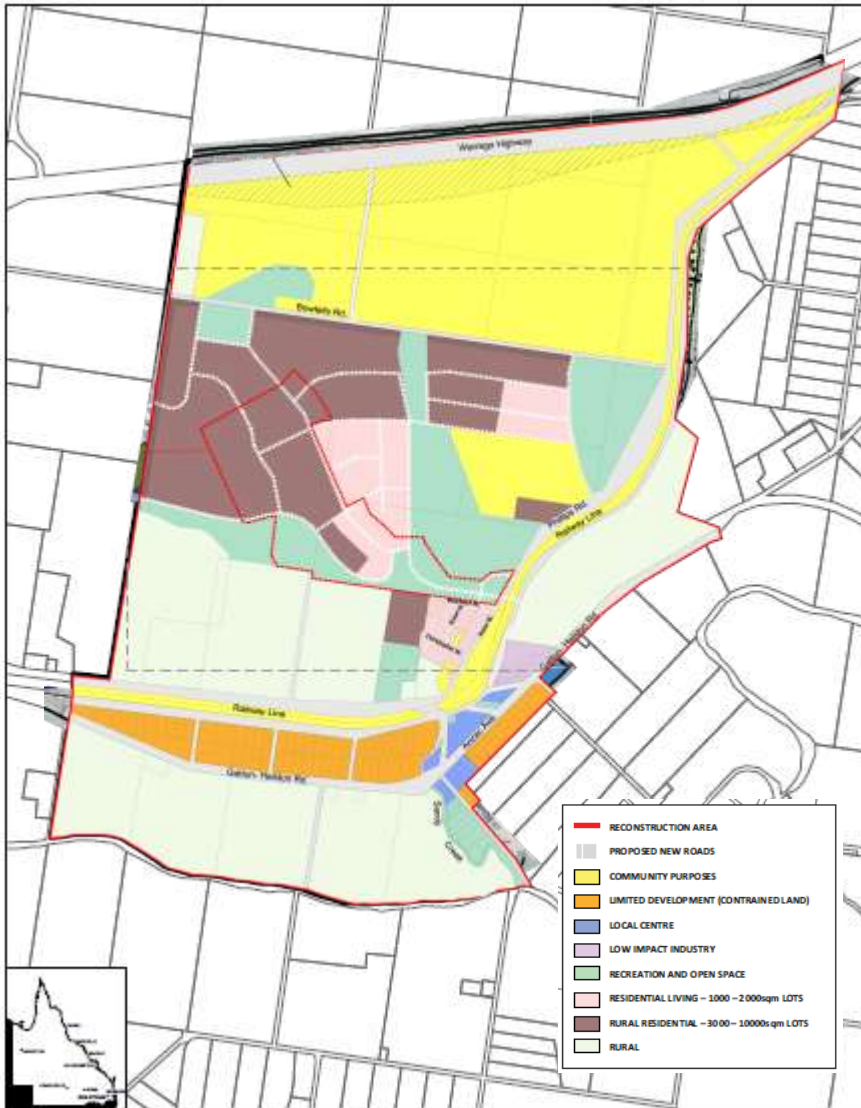
Major new facilities have started to emerge as well. There are plans to expand the town further north and east, and introduce more community facilities and parks in the new part of town. Whilst not developed yet, the new showgrounds which are planned adjacent to the Warrego Highway will be a great addition to our town when they are built.

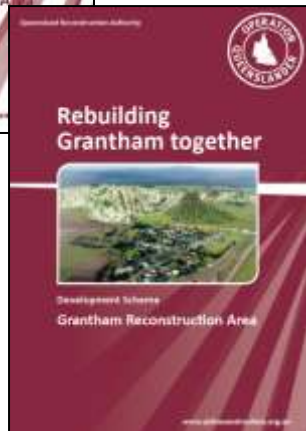
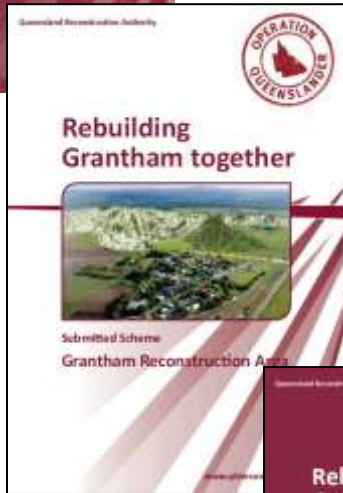
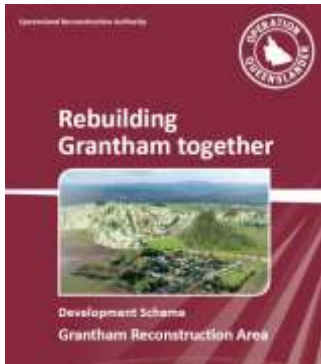
There are noticeably more jobs in town now, with some new rural businesses that have been built to the east of the main street supporting the farming and rural activities which are the foundation of our town.

Grantham is an amazing place - we have endured tragedy and emerged stronger and prouder, with a wonderful mix of history and character and strong and vibrant new areas that are helping us achieve a safe and bright new future.

Reconstruction Area

Translating the Master Plan into a Land Use plan





The Authority can prepare a Development Scheme for a Reconstruction Area

Convert the Master Plan into a regulatory framework

Vision

Land Use Plan – similar to a Local Plan. Regulates what development can occur

Infrastructure plan – supports Land Use Plan relating to infrastructure, eg water, sewer stormwater & power

Implementation strategy

Qld's first Queensland Planning Provision compliant Planning Scheme – took effect on 4 August 2011.

Less than four months after declaration which includes 2 1/2 months of community consultation

Delivery... a stronger, more resilient Grantham



- First designated Reconstruction Area under QRA powers
- Fast track processes – years to weeks
- Cut red tape to support delivery
- Developed Master Plan & translated this into a Development Scheme
- First Queensland Planning Provision compliant scheme in the State
- Construction has begun on first stage
- People in new homes by Christmas 2011





Delivery... a stronger, more resilient Grantham



Delivery... a stronger, more resilient Grantham

Less than 12 months after the event the First home is relocated to the new estate

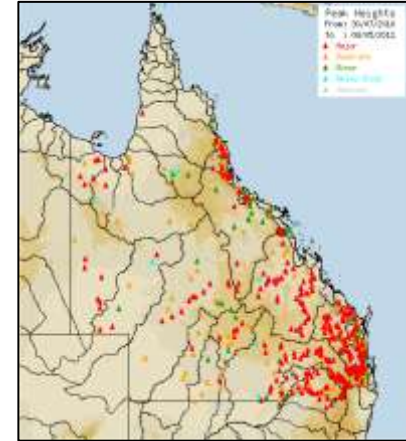


Planning for stronger, more resilient floodplains



Delivery... stronger, more resilient floodplains

- Flooding is not new to Queensland
- 2010/2011 - 91% of the State disaster activated as a result of flooding events
- 210 townships/suburbs were affected by flooding
- 13 river catchments recorded their highest peak levels
- 65% of planning schemes do not contain any flood mapping
- Floodplains do not correlate with local government boundaries
- New building codes will be brought in by the end of 2011 promoting resilience in houses
- The 'Queenslander' style home performed better in floodplain areas
- Limited visibility of flood studies



Delivery... stronger, more resilient floodplains

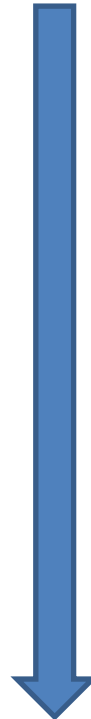
To assist Councils to ensure that floodplain management is addressed through land use planning.

- **Part 1 – Interim measures to support floodplain management in existing planning schemes**, is an information toolkit including mapping identifying an interim floodplain assessment overlay and interim floodplain management controls.
- **Part 2 – Standard planning scheme provisions and flood study template**, will enable consistency in application of floodplain management controls and regulation across Queensland within new planning schemes prepared under the *Sustainable Planning Act 2009*.

Current
Planning
Scheme



Interim
Solution



Flood Study during Planning Scheme prep

New SPA
Planning
Scheme

Delivery... Interim solution

Toolkit released on 17 September 2011 for consultation

Guideline

Mapping (hard copy and digital) for each sub-basin within an LGA boundary

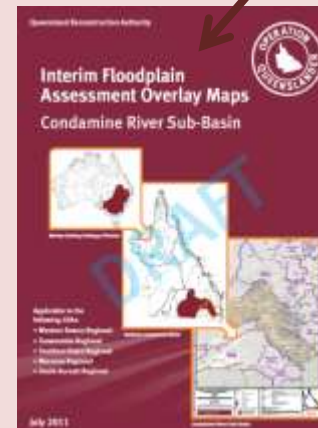
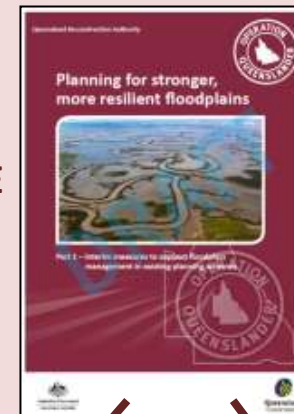
Planning scheme provisions – Model Code

Part 1 offers an Overlay to be inserted into existing planning schemes that can be used like any other Overlay to assess a development's ability to deal with potential flooding impacts.

Mapping - provided for whole of the scheme area and not just townships. Can be amended and encouraged to be amended with best local information.

TOOLKIT

GUIDELINE Part 1

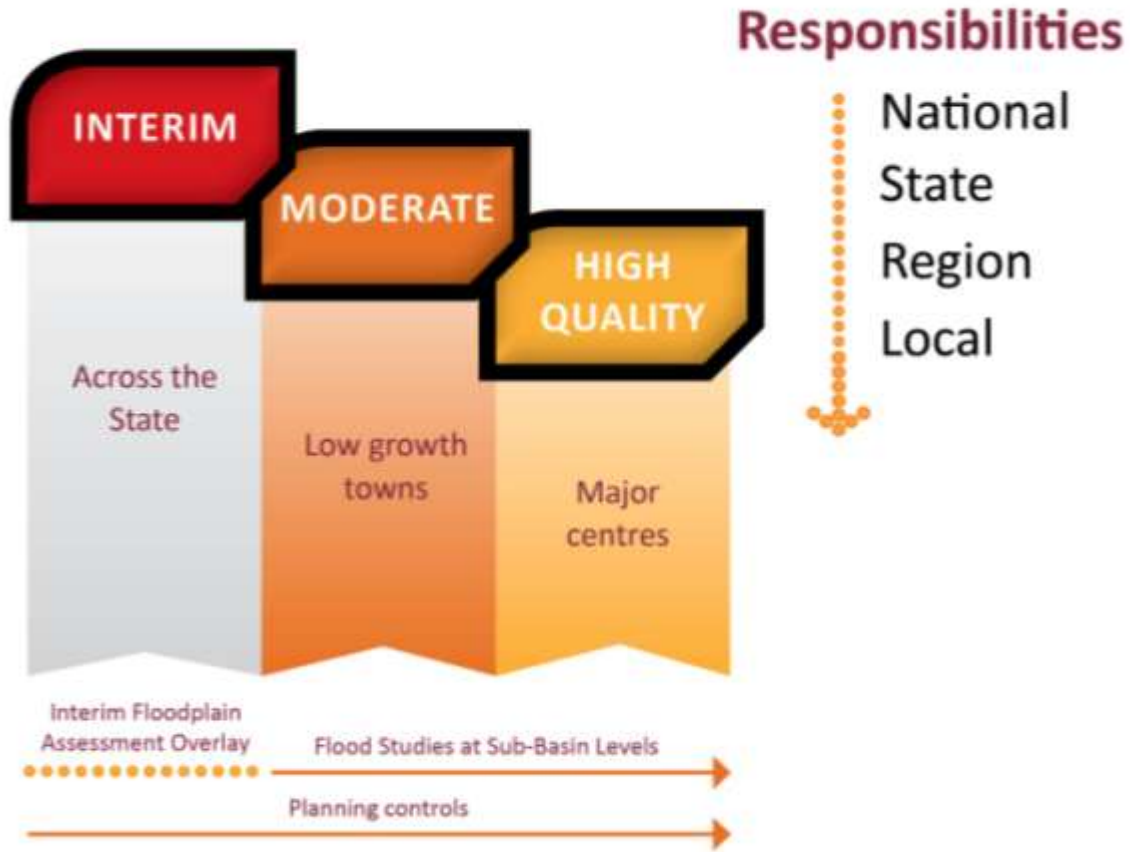


Mapping



Code provisions

Flood Mapping – Needs to be fit for purpose



Floodplain - Line of Sight

DRAINAGE DIVISION

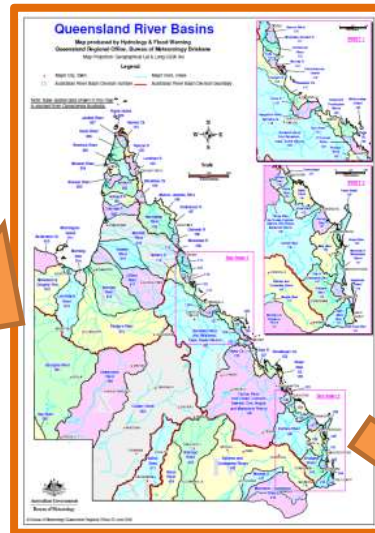


National = 12
Queensland = 5 (40%)

including:

- Northeast Coast (1)
- Gulf of Carpentaria (9)
- Murray Darling Division (4)
- Bulloo – Bancannia Division (10)
- Lake Eyre Division (11)

RIVER-BASINS



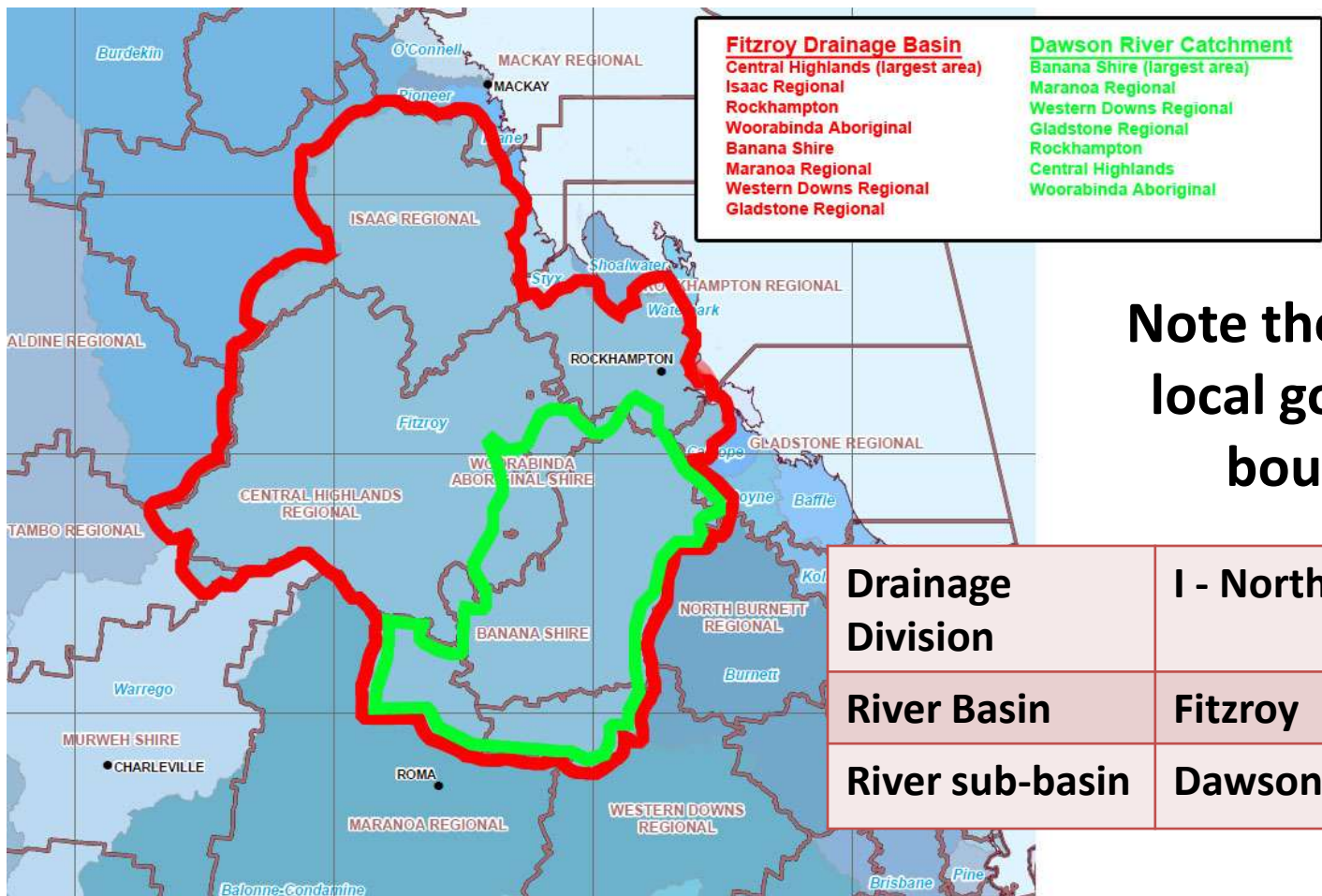
National = 246
Queensland = 75 (30%)
I.e. Fitzroy River Basin
Condamine River Basin

SUB-BASINS

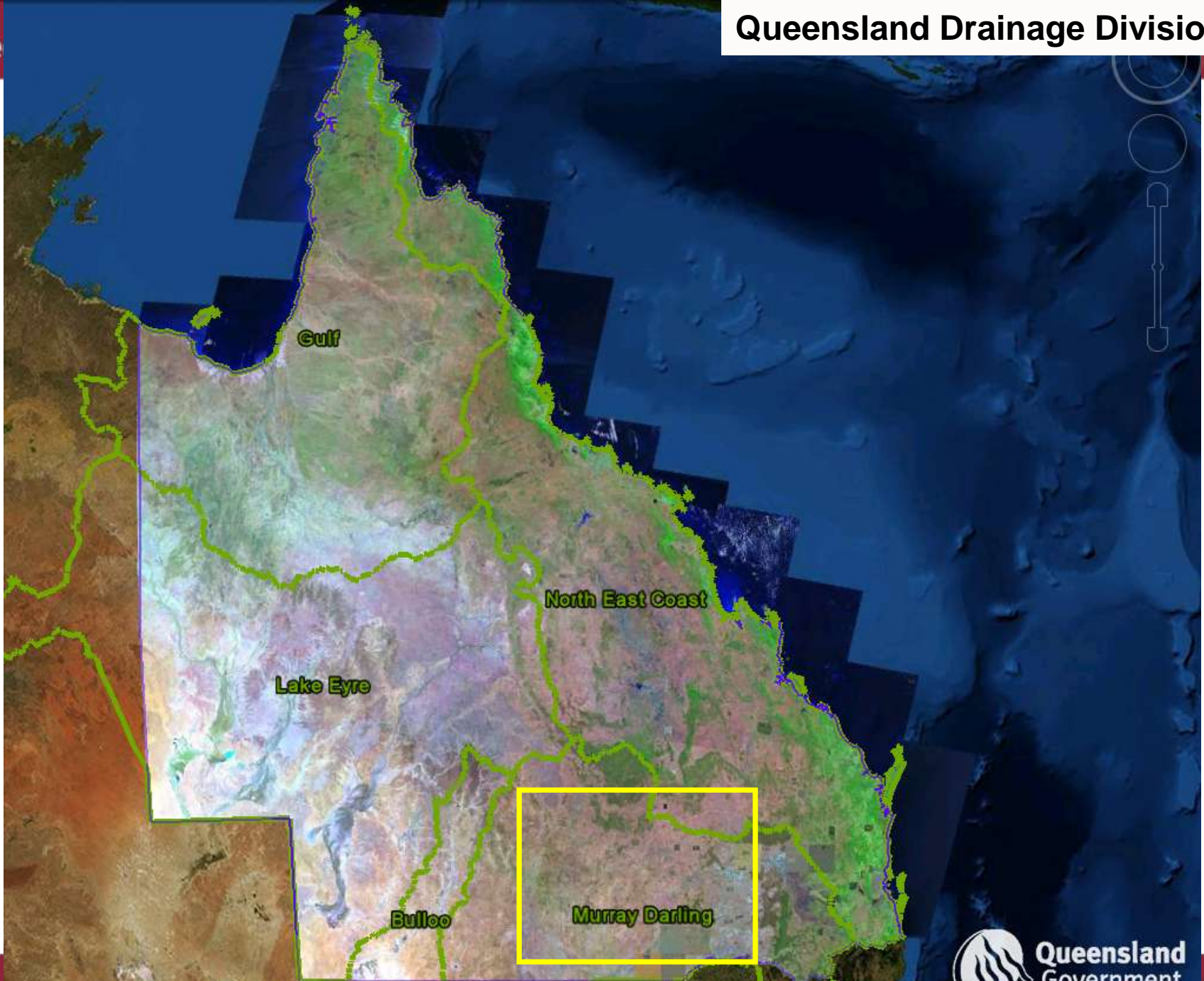


129 Sub-basins in Queensland
I.e. Dawson River , Nogoia River

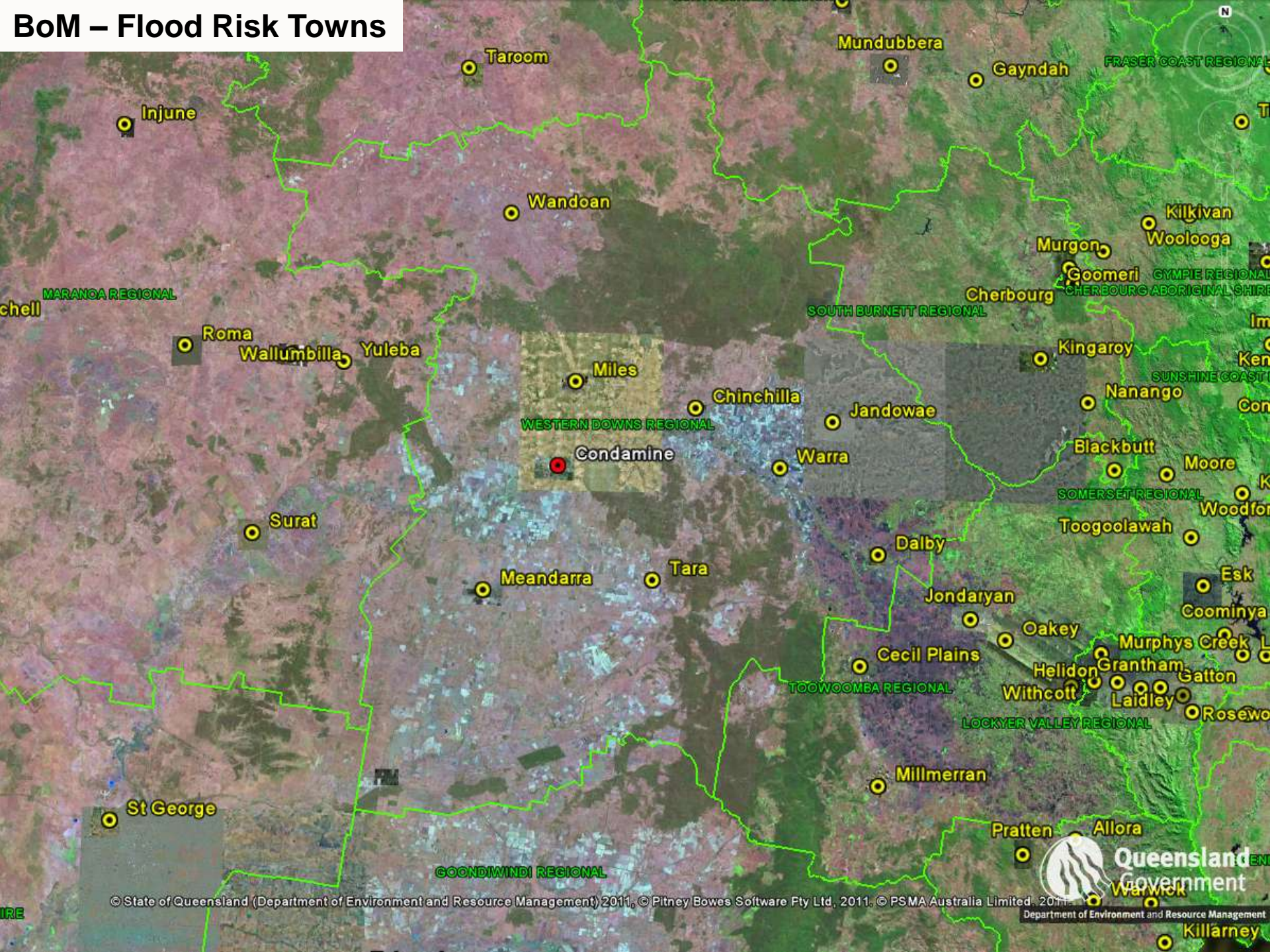
Fitzroy River Basin & Dawson River Sub-basin



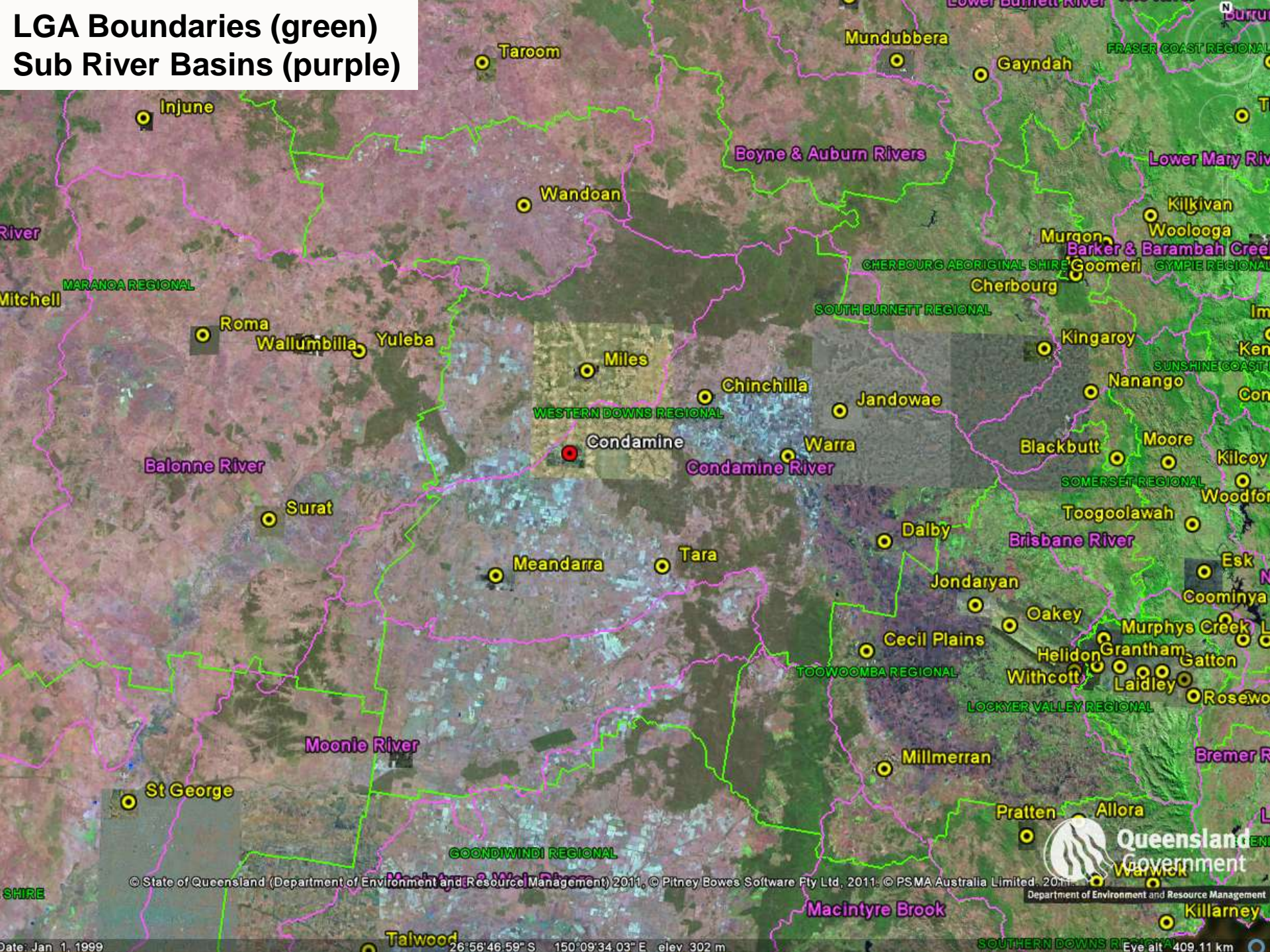
Note the overlay of local government boundaries



BoM – Flood Risk Towns



LGA Boundaries (green)
Sub River Basins (purple)



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Department of Environment and Resource Management

Condamine Aerial Photography 2011 Flood



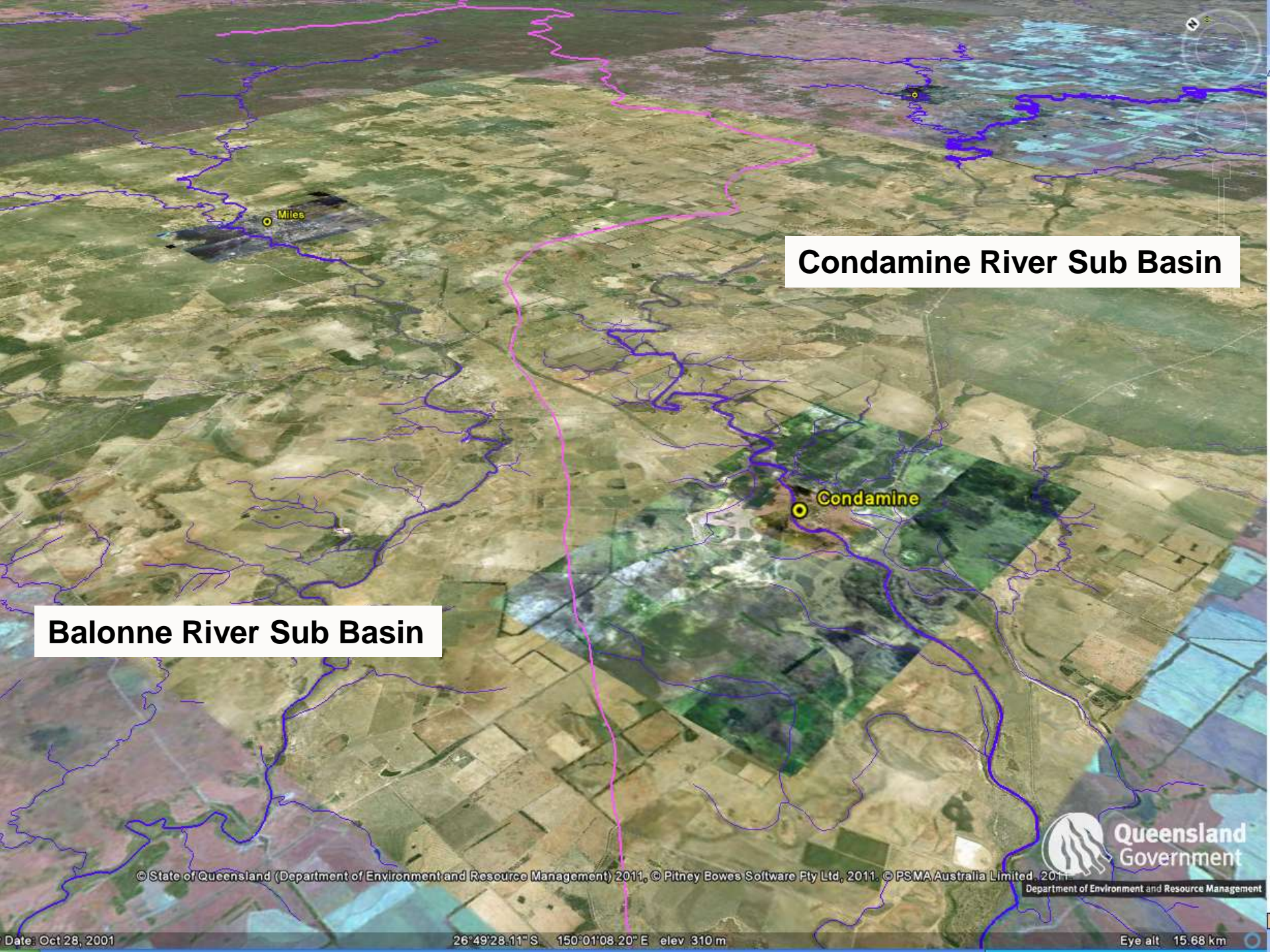
Condamine



Queensland
Government

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Department of Environment and Resource Management



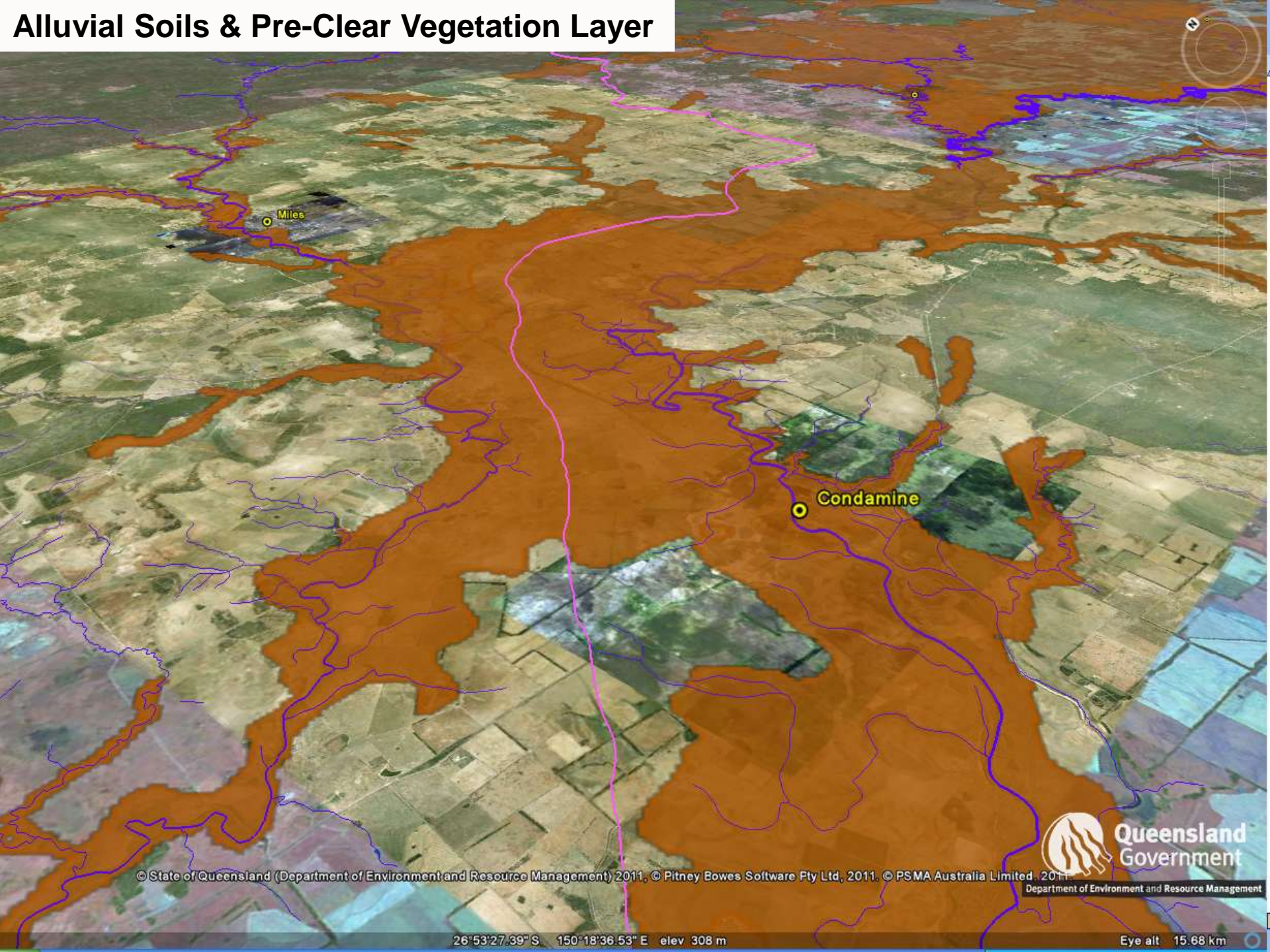
Balonne River Sub Basin

Condamine River Sub Basin

Condamine

Miles

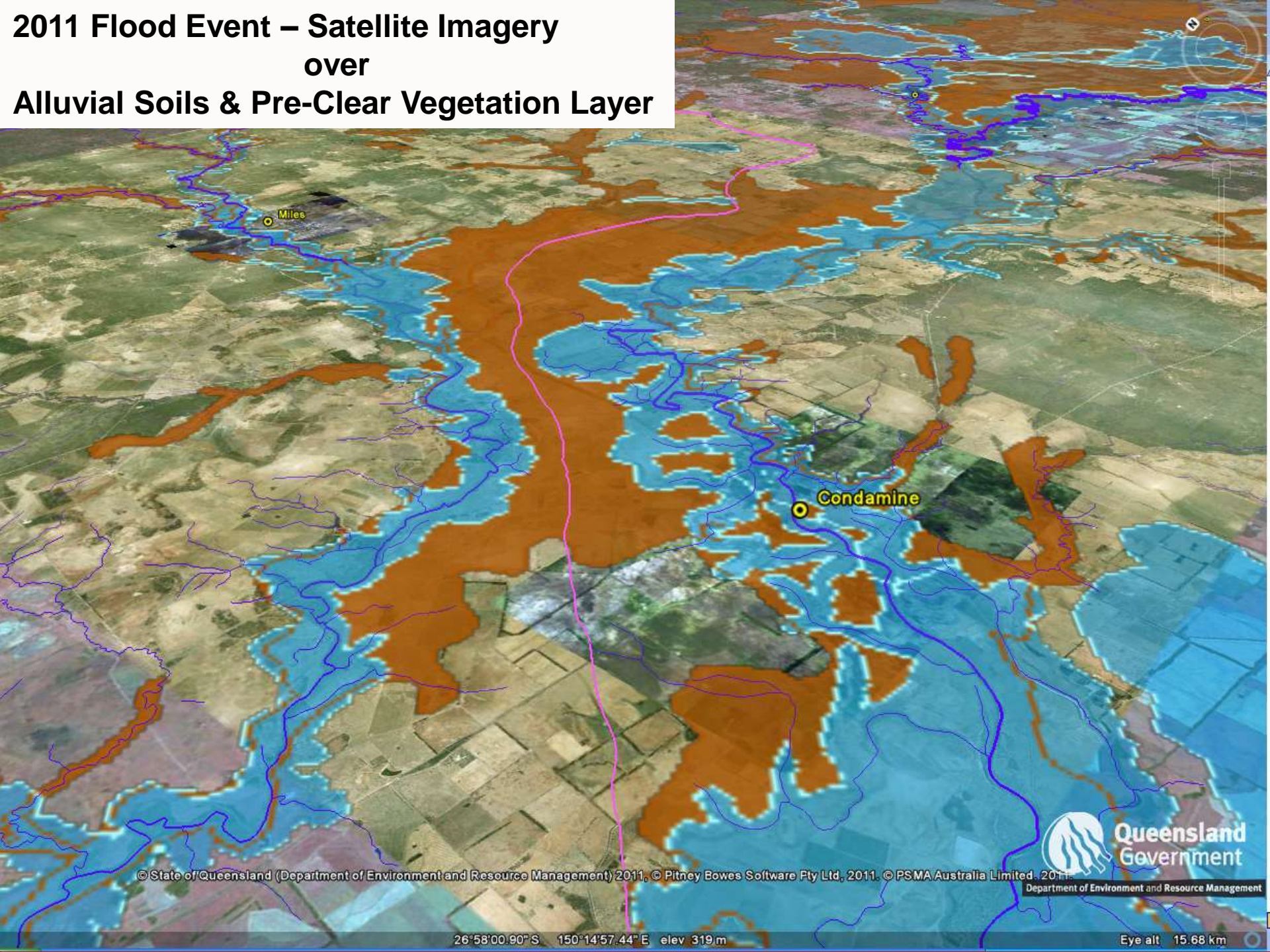
Alluvial Soils & Pre-Clear Vegetation Layer



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26°53'27.39" S 150°18'36.53" E elev 308 m Eye alt 15.68 km

2011 Flood Event – Satellite Imagery over Alluvial Soils & Pre-Clear Vegetation Layer

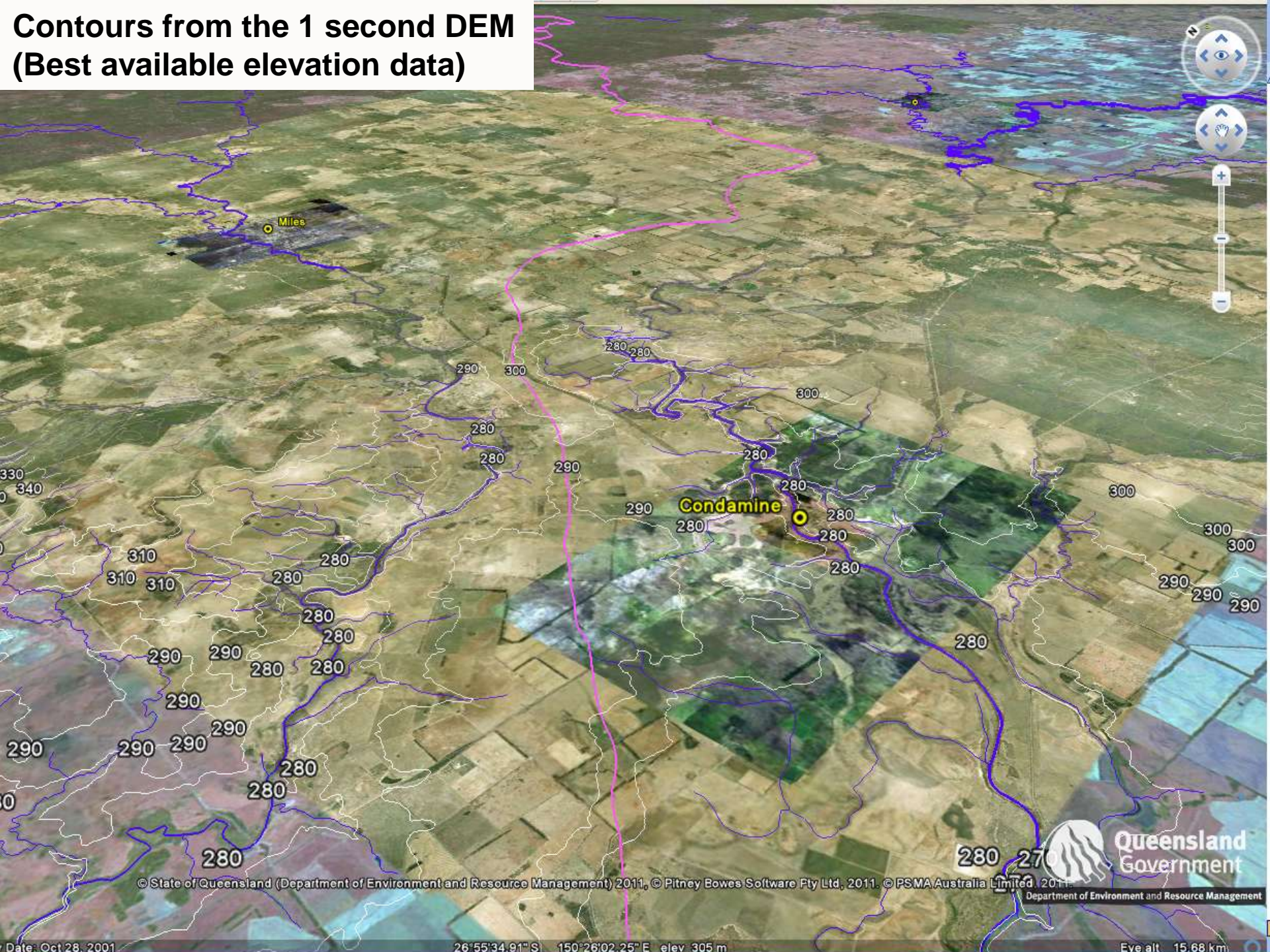


© State of Queensland (Department of Environment and Resource Management) 2011, © Pitney Bowes Software Pty Ltd, 2011, © PSMA Australia Limited, 2011. Department of Environment and Resource Management

26°58'00.90" S, 150°14'57.44" E, elev 319m

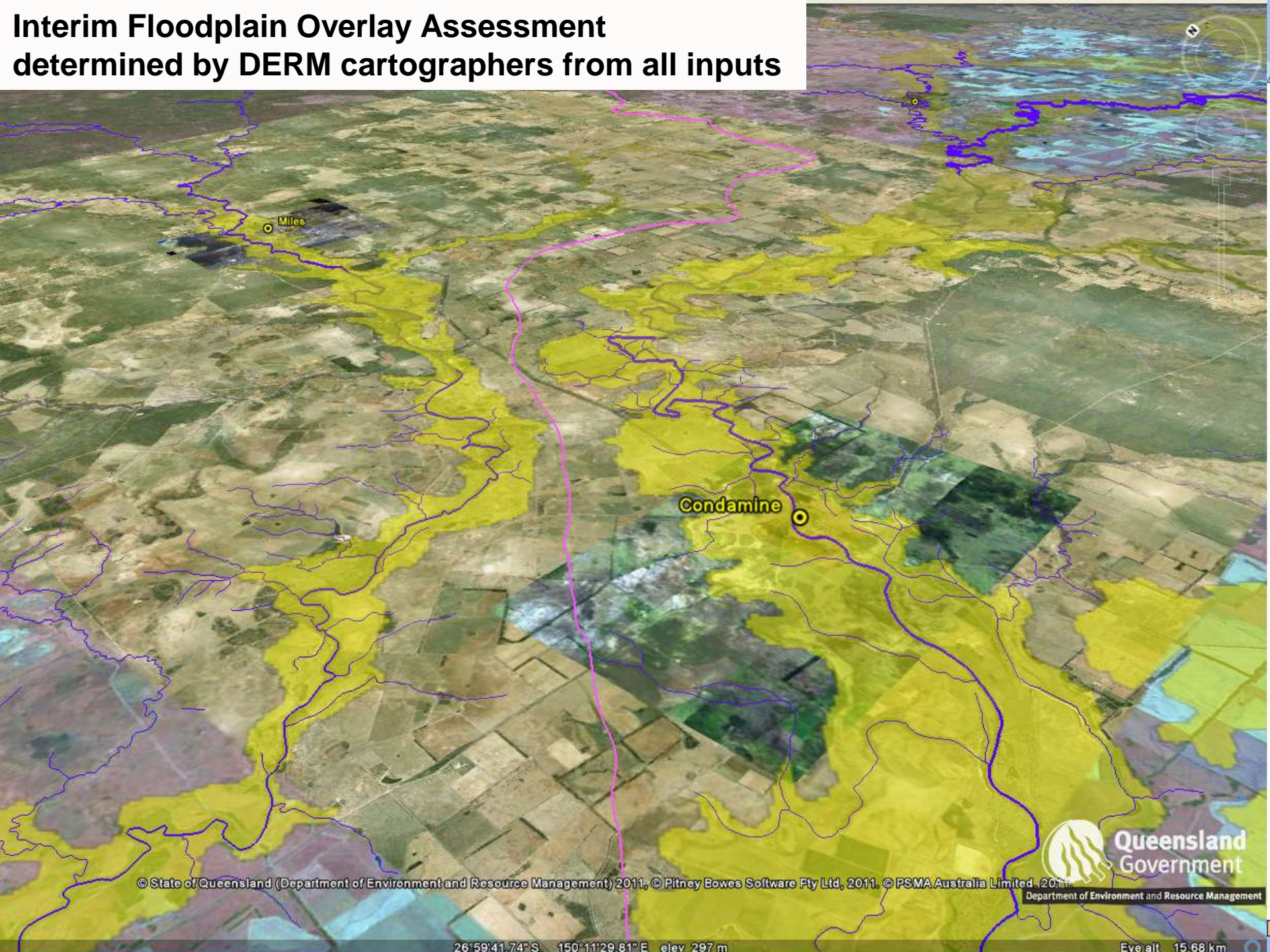
Eye alt 15.68 km

Contours from the 1 second DEM (Best available elevation data)



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Interim Floodplain Overlay Assessment determined by DERM cartographers from all inputs



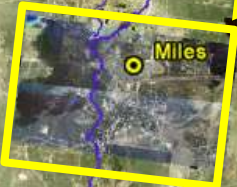
© State of Queensland (Department of Environment and Resource Management) 2011, © Pitney Bowes Software Pty Ltd, 2011, © PSMA Australia Limited, 2011



26°59'41.74"S 150°11'29.81"E elev 297 m

Eye alt 15.68 km

Aerial Photography 2011 Flood Event



Miles



Chinchilla



Condamine

Satellite Imagery & Aerial Photography

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Balonne River Sub Basin

**Detailed Flood lines from Aerial Photography
(joined into the satellite imagery layer)**

Miles

Chinchill

Condamine

Condamine River Sub Basin

2011 Flood Event – Satellite Imagery

© State of Queensland (Department of Environment and Resource Management) 2011, © Pitney Bowes Geomatics Pty Ltd, 2010, © CSIRO Australia Limited 2010
Department of Environment and Resource Management

26°35'50.96" S 150°01'53.96" E elev 357 m

Eye alt 66.91 km

Balonne River Sub Basin

Isolations – typically due to cloud
(can't map what we can't see)

Miles

Chinchilla

Condamine

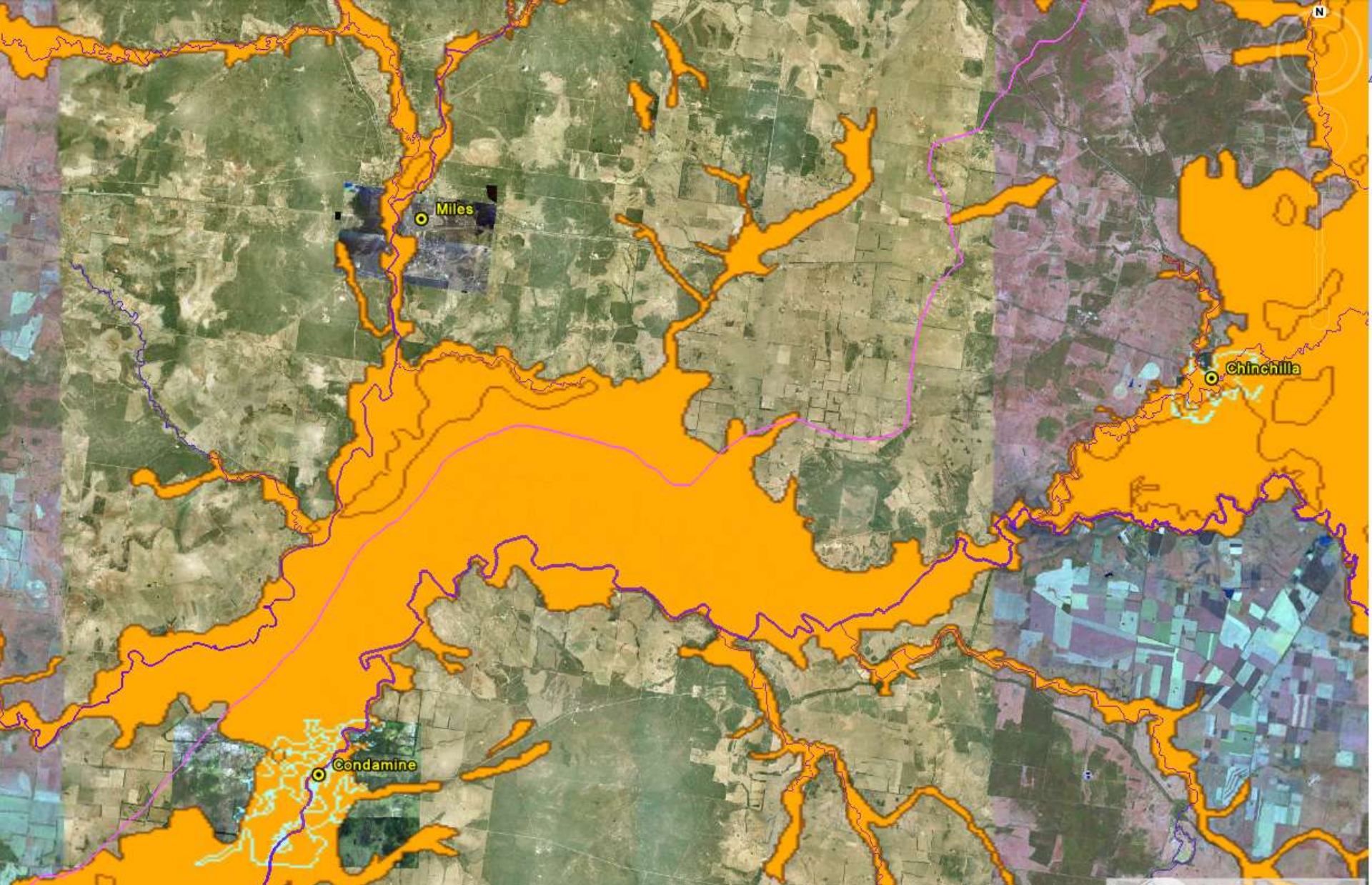
Condamine River Sub Basin

2011 Flood Event – Satellite Imagery

© State of Queensland (Department of Environment and Resource Management) 2011, © Pitney Bowes, Geotitles Pty Ltd, 2010, © CSIRO Australia Limited 2011. Department of Environment and Resource Management

26°35'50.96" S 150°01'53.96" E elev 357 m

Eye alt 66.91 km

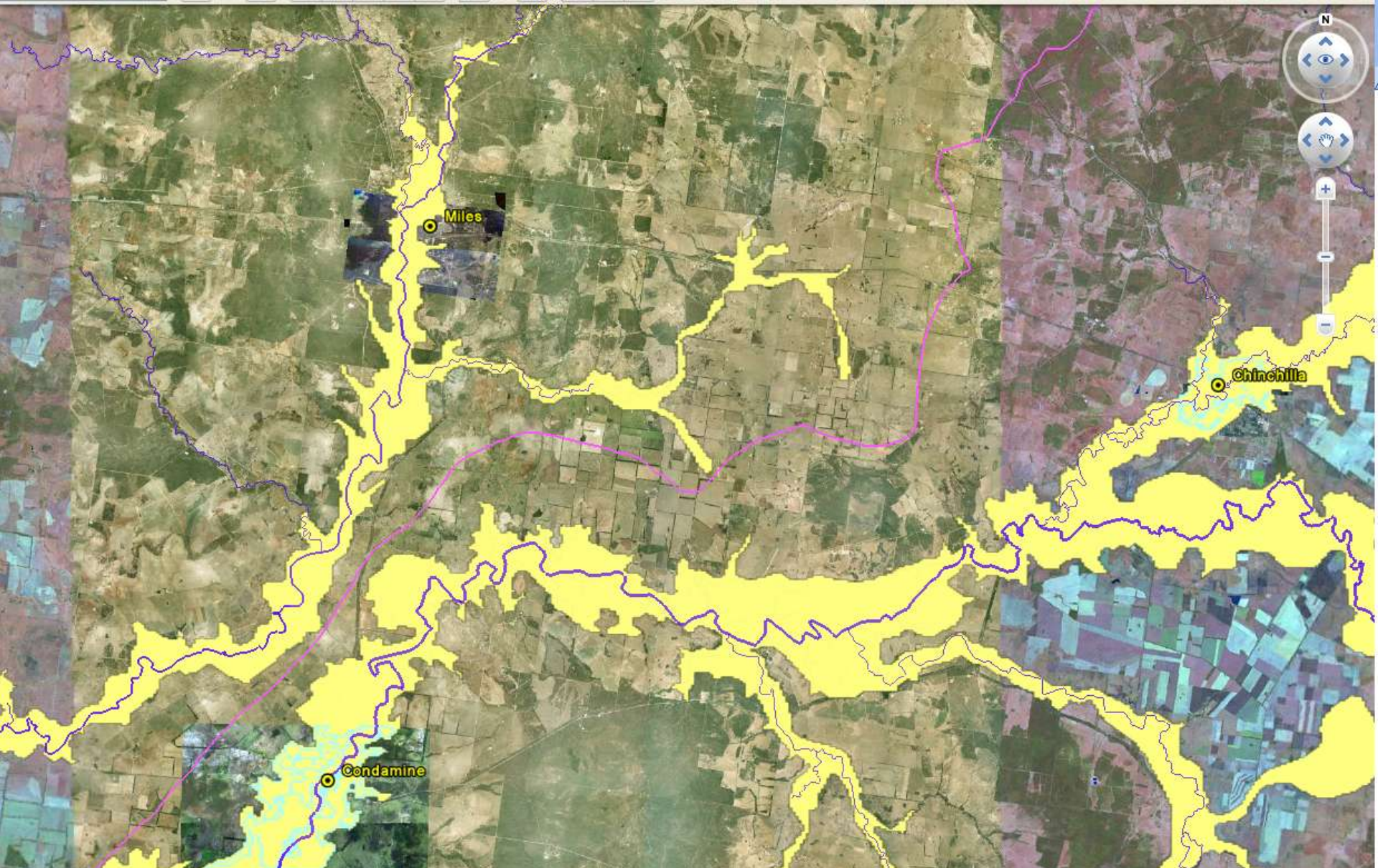


Alluvial Soils & Pre-Clear Vegetation Layer

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26°46'07.71" S 150°29'28.78" E elev 326 m

Eye alt 66.91 km

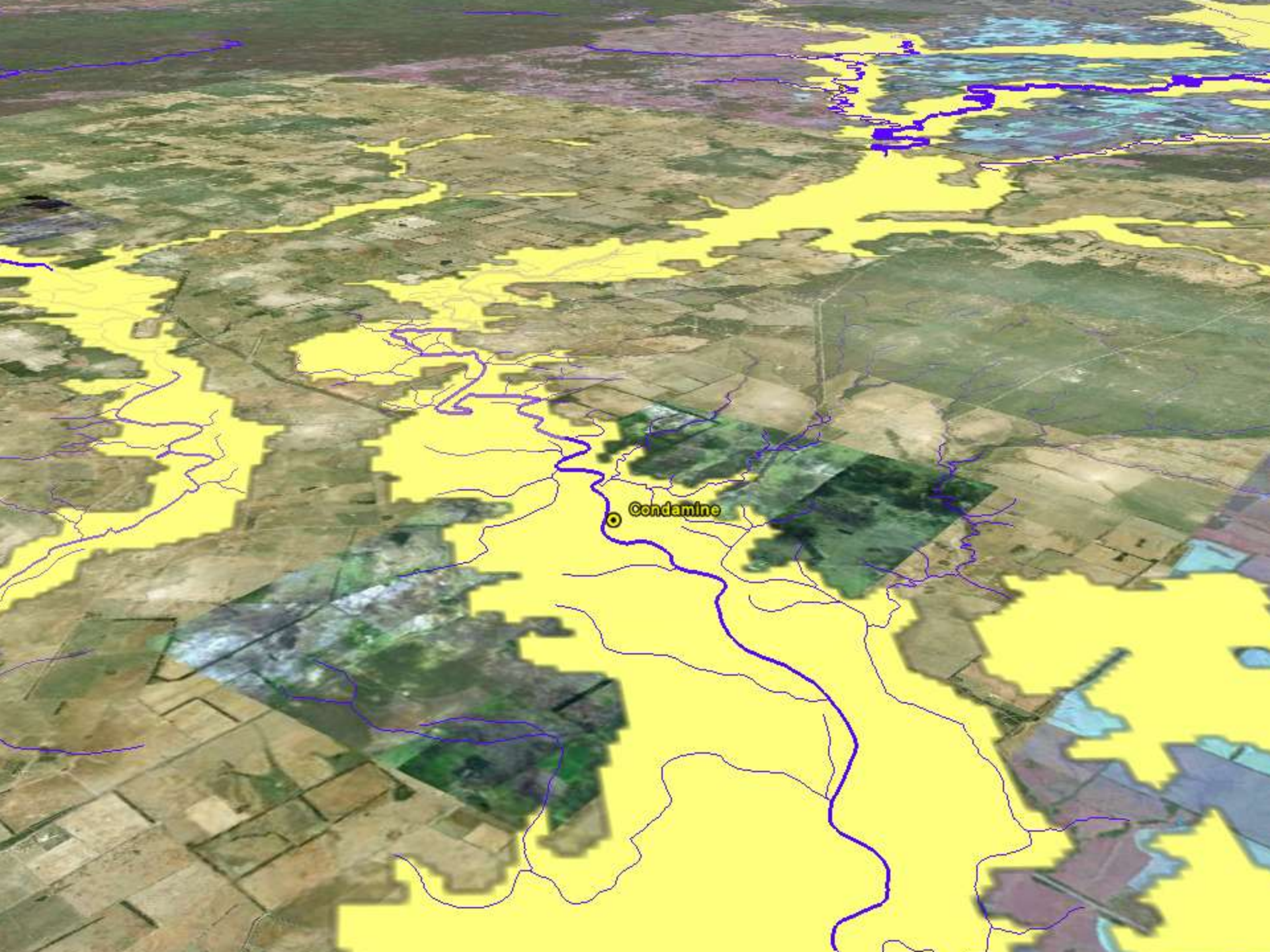


**Interim Floodplain Overlay Assessment
determined by DERM cartographers from all inputs
including DEM / Contours**

© State of Queensland (Department of Environment and

26°37'42.82" S 150°40'46.58" E elev 326 m

Eye alt 66.91 km



Condamine

Delivery ...the Interim Floodplain Assessment Overlay



10m Contours



LandSat



Gauging Heights



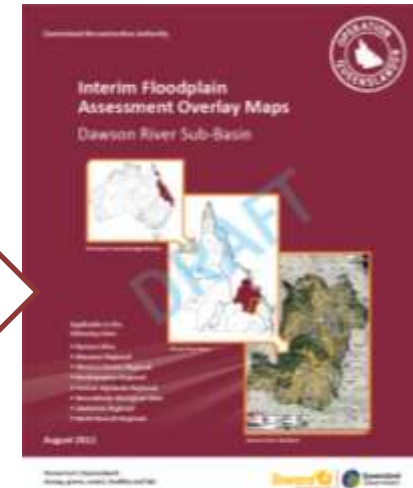
Pre-cleared
vegetation



Stream Orders
5 - 9



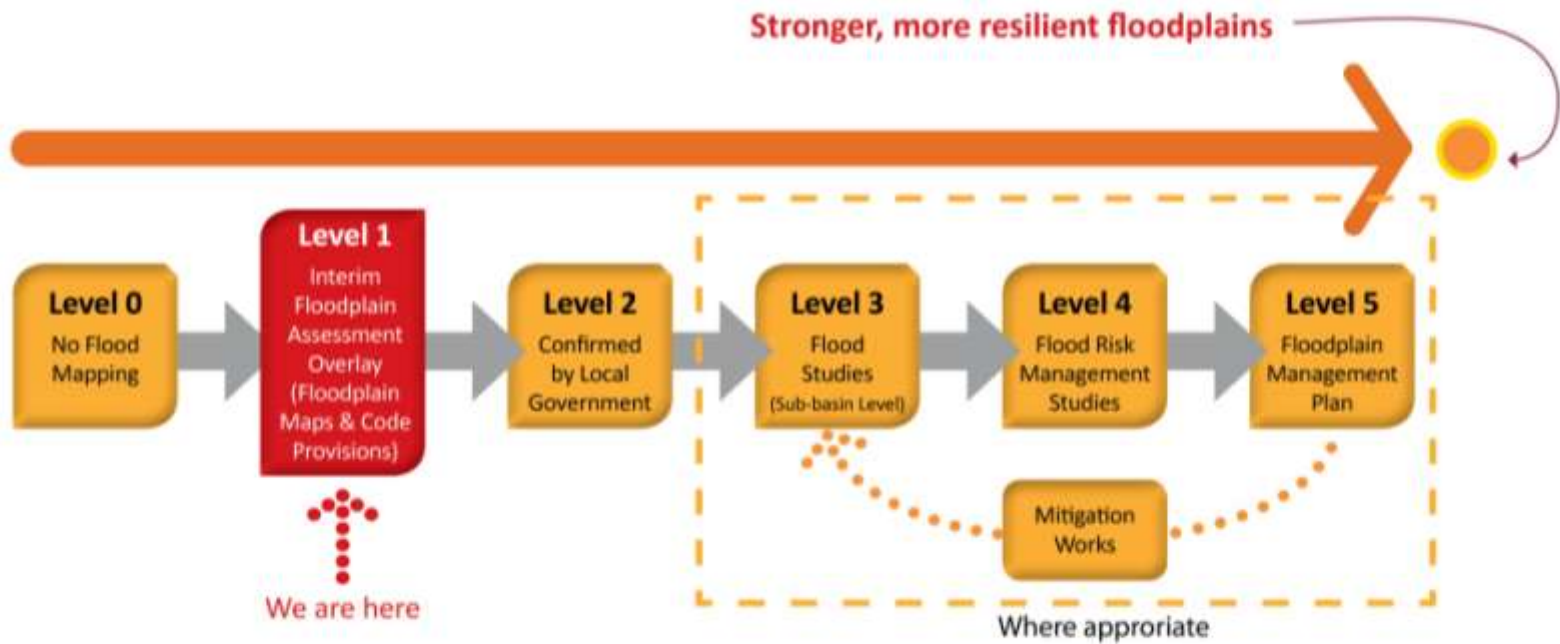
Aerial for towns



- State-wide datasets to deliver a state-wide mapping product.
- Sub-basin product translated into a mapbook containing a series of maps at a scale of 1:50,000
- All available on line



Flood Mapping Maturity Levels

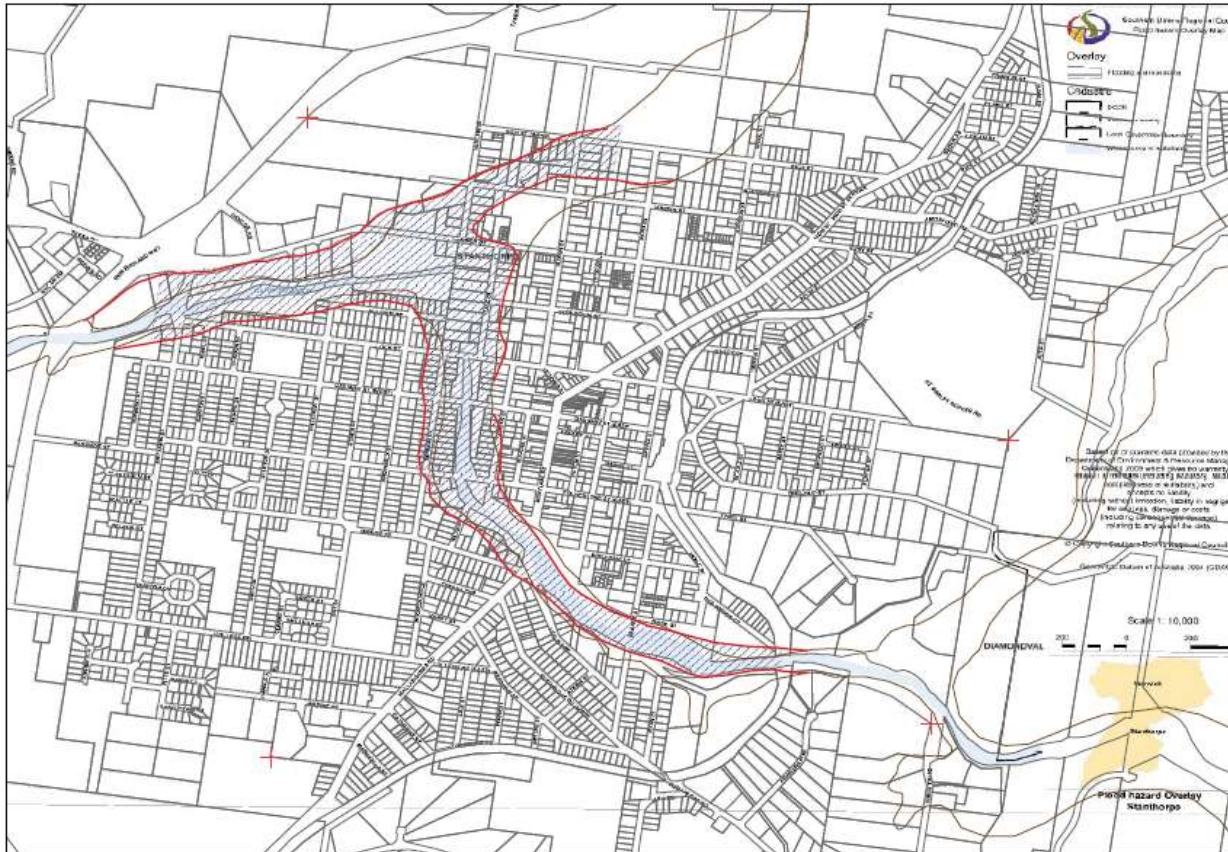


Level 2 – Local verification


Very important to verify and refine the interim line based on local knowledge.

- **Have we mapped too far, or not far enough along watercourses?**
- **On broader floodplains, is the line too wide or not wide enough?**
- **Within the IFAO areas, have we missed higher ground that should be excluded?**

EXAMPLE OF REFINEMENT PROCESS - Stanthorpe



 Refined floodplain assessment overlay incorporating local government verification

 Detailed flood study or flood information available in this area

 Interim Floodplain Assessment Overlay as produced by the Qld Reconstruction Authority

Interactive Map

Roads and Transport Buildings and Housing Economics Human and Social Environment Floodplain Mapping

Streets Aerial Topo

Map Contents

- Floodplain Mapping**
 - Interim Floodplain Assessment Overlay** [Less Info](#)
Off On
 - QLD Drainage Basins (Sub Basins)** [Less Info](#)
Off On
 - Basin Currently Mapped
 - Work In Progress
 - QLD Drainage Basins** [More Info](#)
- View 2010/11 flood event information**
 - Affected Communities** [More Info](#)
 - Roma April 2011 Flood lines** [More Info](#)
 - Roma April 2011 Flood Imagery** [More Info](#)
 - 2010-2011 Interim Flood lines** [More Info](#)
 - 2010-2011 Flood and Cyclone Imagery** [More Info](#)

Feedback

Latitude: 22.600598 Longitude: 153.339363

Source: ESRI, i-cubed, USDA FSA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGP

POWERED BY esri

Done Internet 100%

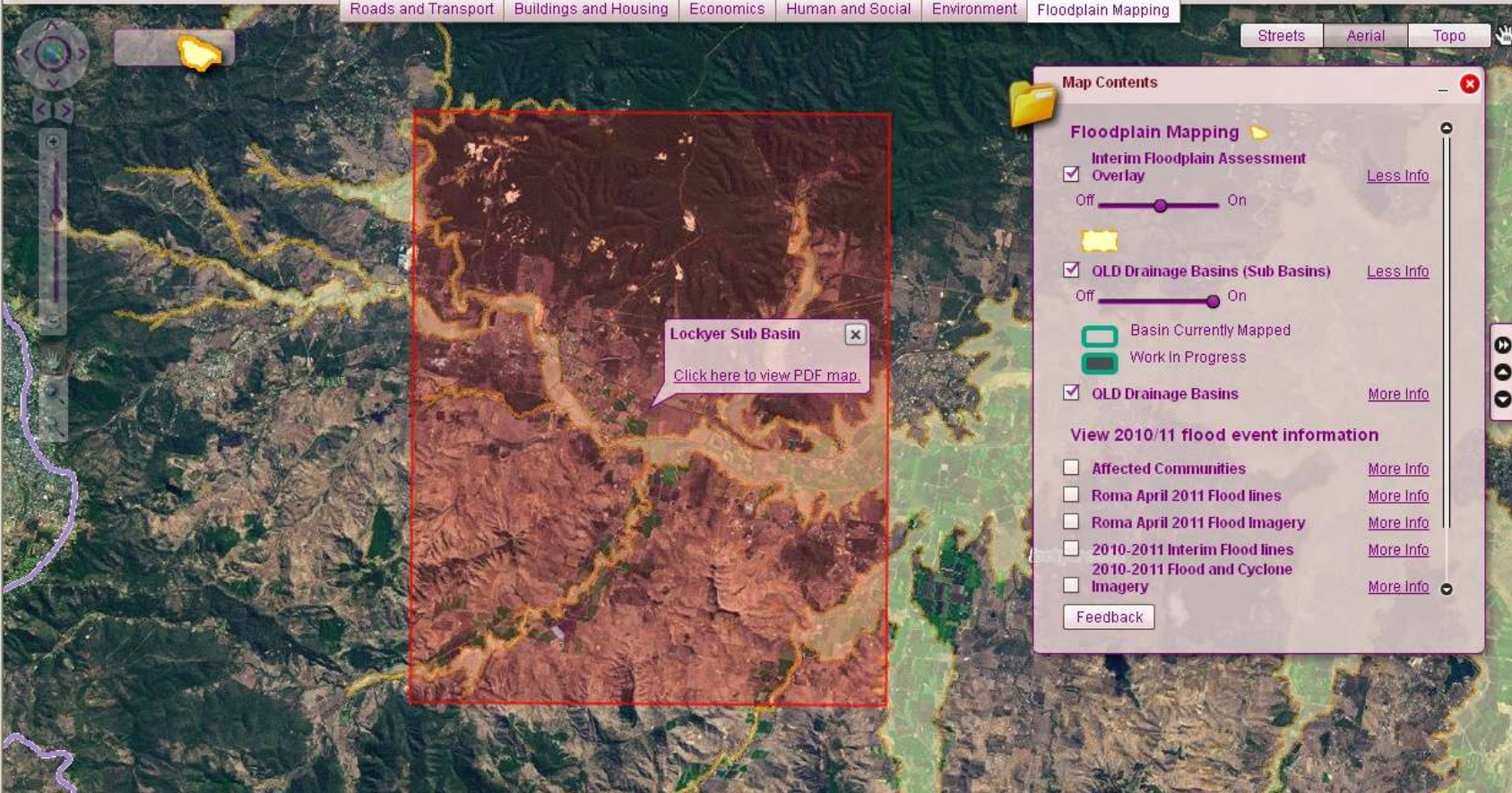
Interactive Map



[Feedback](#) [About](#)

[Roads and Transport](#) | [Buildings and Housing](#) | [Economics](#) | [Human and Social](#) | [Environment](#) | [Floodplain Mapping](#)

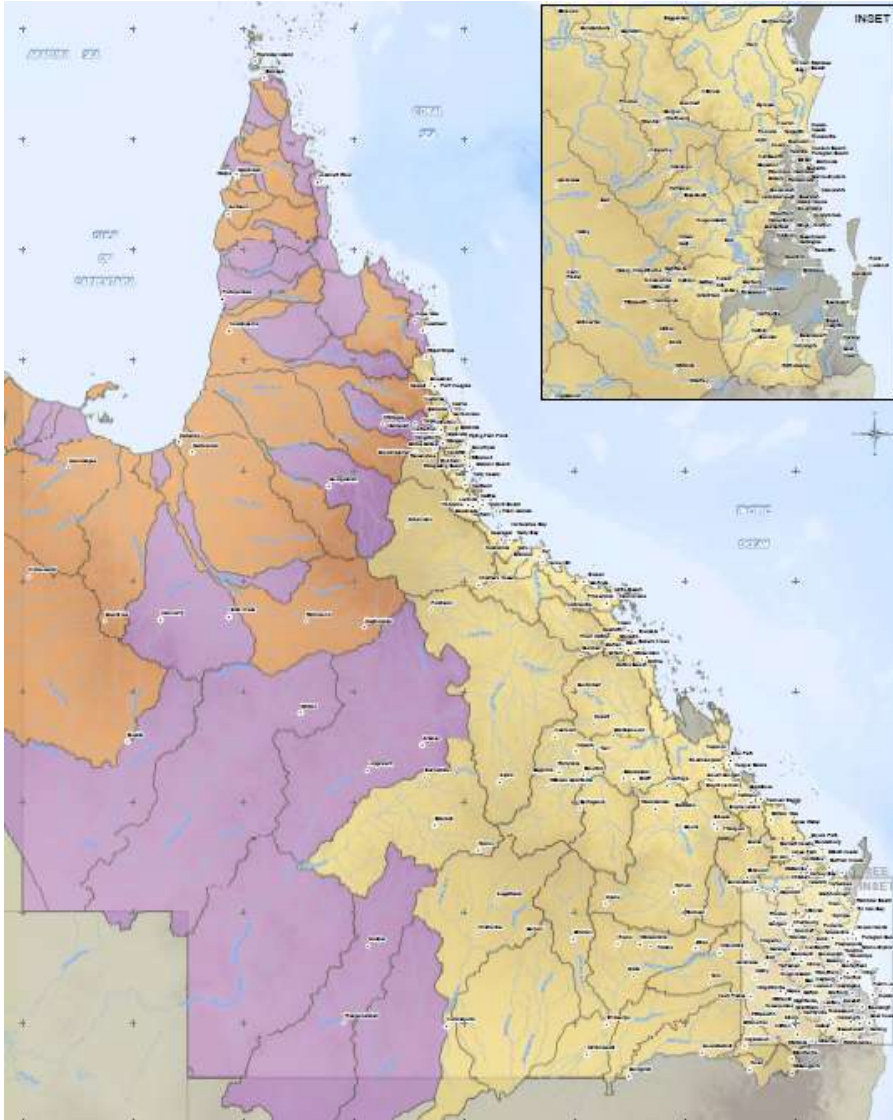
[Streets](#) | [Aerial](#) | [Topo](#)



Map Contents

- Floodplain Mapping**
 - Interim Floodplain Assessment Overlay** [Less Info](#)
Off On
 - OLD Drainage Basins (Sub Basins)** [Less Info](#)
Off On
 - Basin Currently Mapped
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 - OLD Drainage Basins** [More Info](#)
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 - Roma April 2011 Flood Imagery** [More Info](#)
 - 2010-2011 Interim Flood lines** [More Info](#)
 - 2010-2011 Flood and Cyclone Imagery** [More Info](#)

[Feedback](#)



Progress

- 63 river basins now completed as at 19 October (128 in Queensland) representing 40% of Queensland
- Over 2500 map pages produced to date (A3 @1:50,000 scale)
- 110,000km² identified as part of Interim Floodplain Assessment Overlay from these 63 river basins.
- Largest mapping exercise currently underway across the country
- Using more than 35 experienced cartographers

Provisions needed to support mapping



Turkey mound??



Bird's nest.....??



Model Code

Applicable to assessable development as determined by existing planning scheme ie. is unlikely to capture single dwellings (as not assessable under schemes) however would be picked up by new QDC provisions

Based on principles set out in SPP1/03

Promotes better built form ie. elevation, filling

Front loads questions around flooding impacts – should reduce information requests

Would be triggered as an overlay within the existing scheme

Performance Outcomes	Acceptable Outcomes
PO1. Development siting and layout responds to flooding potential and maintains personal safety at all times.	<p>For Material Change of Use and Building Work</p> <p>AO1.1. New buildings are:</p> <ul style="list-style-type: none"> located outside the overlay area, or located on the highest part of the site to minimise entrance of floodwaters; or elevated; and provided with clear and direct pedestrian and vehicle evacuation routes off the site. <p>Note: if part of the site is outside the FFAO Floodplain Mapped area, this is the preferred location for all buildings.</p> <p>For Reconfiguring a Lot</p> <p>AO1.2. New lots are:</p> <ul style="list-style-type: none"> located outside the overlay area; or where possible, located on the highest part of the site to minimise entrance of floodwaters. <p>Note: if part of the site is outside the FFAO Floodplain Mapped area, this is the preferred location for all lots (including park or other relevant open space and recreation lots).</p> <p>Note: Buildings subsequently developed on the lots created will need to comply with the relevant building assessment provisions under the Building Act 1975.</p>

Performance Outcomes	Acceptable Outcomes
Cont'd PO1. Development siting and layout responds to flooding potential and maintains personal safety at all times.	<p>AO1.3. Road and/or pathway layout provides a safe and clear evacuation path:</p> <ul style="list-style-type: none"> if a flood level is adopted, by locating entry points into the reconfigurations above the flood level and avoiding cul-de-sacs or other non-permeable layouts; or by direct and simple routes to main carriageways. <p>AO1.4. Signage is provided on site (regardless of whether land will be public or private ownership):</p> <ul style="list-style-type: none"> indicating the position and path of all safe evacuation routes off the site; and if the site contains or is within 100m of a floodable waterway, hazard warning signage and depth indicators are also provided at key hazard points, such as at floodway crossings or entrances to low-lying reserves.
PO2. Development is resilient to flood events by ensuring design and construction account for the potential risks of flooding.	<p>For Material Change of Use and Building Work (Residential Uses)</p> <p>AO2.1. Residential dwellings are not constructed as single-storey slabs on ground.</p> <p>Note: The highest 'Queenslander' style house is a resilient low-density housing solution in floodplain areas. Higher density residential development should ensure only non-habitable rooms (e.g. garages, landfills) are located on the ground floor.</p> <p>For Material Change of Use and Building Work (Non-Residential Uses)</p> <p>AO2.2. No Acceptable Outcome specified.</p> <p>Note: The relevant building assessment provisions under the Building Act 1975 apply to all building work within the FFAO Floodplain Mapped area and must take account of the flood potential within the area.</p> <p>Note: Resilient building materials for use within the FFAO Floodplain Mapped area should be determined in consultation with Council, in accordance with the relevant building assessment provisions.</p>

TSPP & SPP1/03

SPP1/03 currently under review – not just flooding bushfire and landslide components - DCS lead agency.

SPP1/03 includes default state-wide mechanisms for bushfire and landslide components.

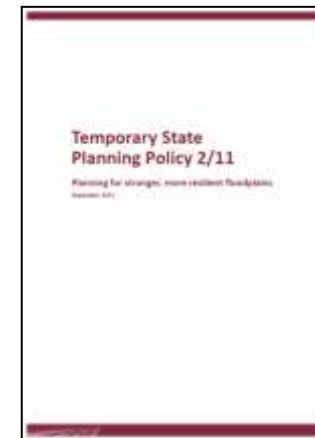
QldRA work to inform the review process.

QldRA work does not replace the SPP1/03 review.

Needed a mechanism by which Councils could adopt mapping as an interim measure until new schemes were developed – TSPP

TSPP – does not require any public notification.
Expire after 1 year.

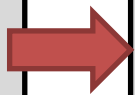
Will commence on 14 November 2011.



Implementation

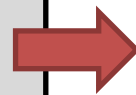
Step 1: Council obtains toolkit

1. *Guideline*
2. *Model Code*
3. *Mapping*
Hard copy mapbook
Digital copy mapbook
Digital datasets



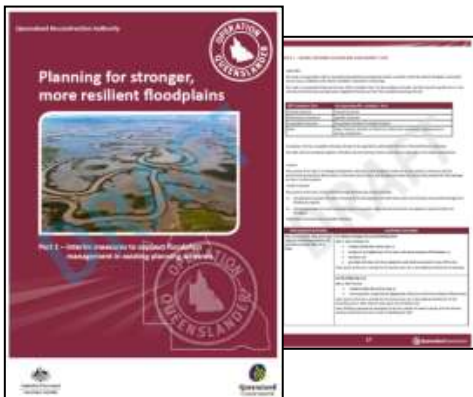
Step 2: Council commences review process including the mapping product and the planning scheme provisions

Use existing studies knowledge, photographs to visually inspect the mapping. QRA to visit the Council.

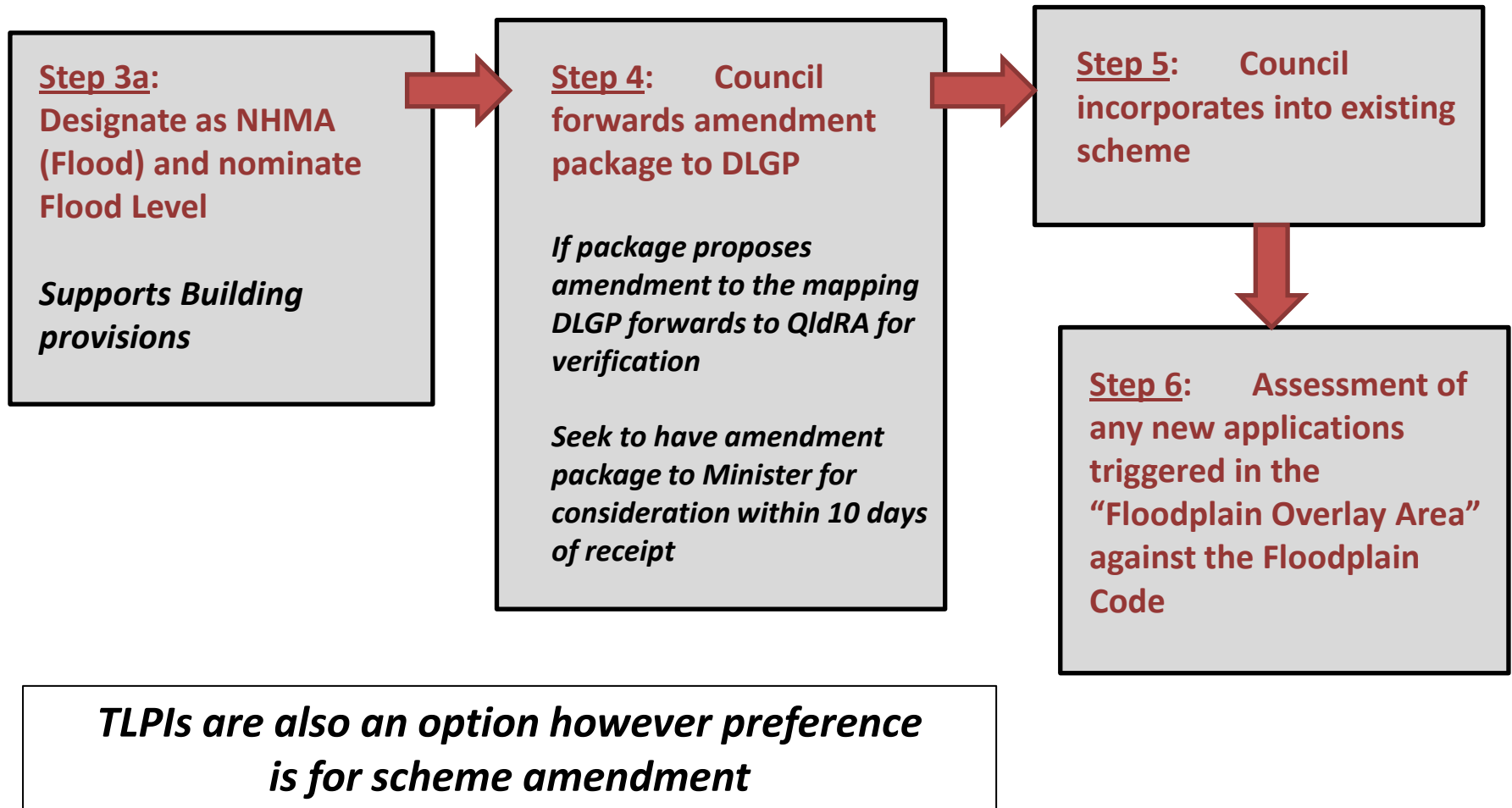


Step 3: Council resolves to undertake a minor scheme amendment

- a) Adopt mapping and Model Code as provided by the Authority unchanged; or*
- b) Adopt Model Code as provided by the Authority and adopt locally amended mapping; or*
- c) Adopt mapping as provided by the Authority and adopt amended Model Code; or*
- d) Adopt locally amended mapping and amended Model Code.*



Implementation cont'd.

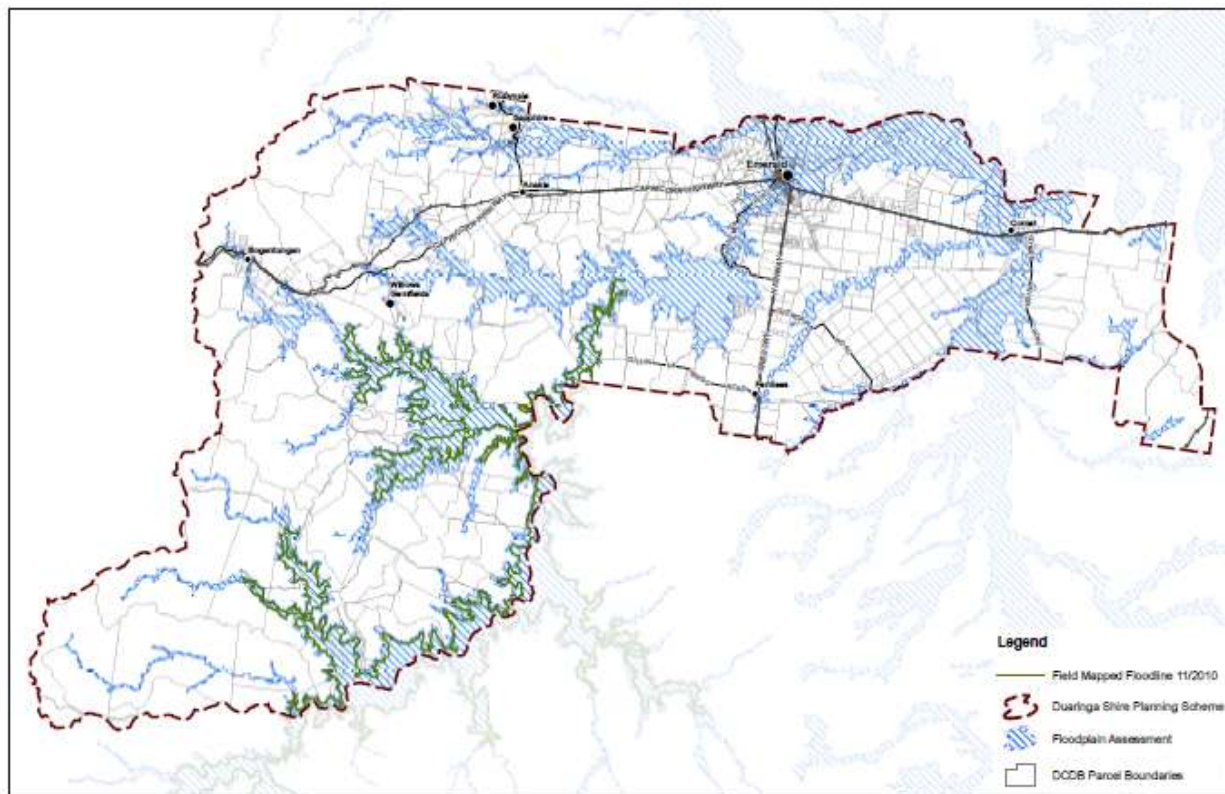


TOOLKIT IN ACTION – Central Highlands Regional Council

CHRC – all four existing schemes do not appropriately reflect SPP1/03 (flood)

CHRC have resolved to undertake minor amendments to all four planning schemes.

QRA/ DERM/DLGP supporting Council in the refinement of both mapping and model code.



FLOOD HAZARD OVERLAY
- FLOODPLAIN ASSESSMENT
EMERALD SHIRE PLANNING SCHEME
OVERLAY MAP NO. NDIS - 2

Scale 1:500,000
North
0 10 20 30 40
Metres
Original Size is A3
© The State of Queensland (Department of Environment and Resource Management)

Legend

- Field Mapped Floodline 11/2010
- Emerald Shire Planning Scheme
- Floodplain Assessment
- DCC6 Parcel Boundaries

Digital Cadastral Database (DCC6) supplied by the Department of Environment and Resource Management November 2011.
While every care is taken to ensure the accuracy of this data, the Department of Environment and Resource Management and its contributors to this publication, makes no representation or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all losses, expenses, costs, damages (including interest or consequential damage) and costs which might be incurred as a result of the data being inaccurate or incomplete in any way or for any reason.

Consultation... Roadshow

Collectively over 70 briefings on the project

Industry:

- Qld Chief Scientist Briefing
- Qld Spatial Information Council
- CSIRO
- State agency briefings
- Engineers Australia
- Spatial Information Officers Conference
- National Flood Risk Advisory Meeting
- State of the Commonwealth Cities
- Urban Development Institute of Australia
- Trowbridge Review



Consultation... LGAs visited to date

Local Government:

- Over 34 Councils visited on the Roadshow
- 3 teams made up of an Authority and DERM officer
- Over 3,000km of driving



Response to date... **Well received**

- Very positive response from the 34 Councils now visited
- Mapping is being well received across each LGA with only minor changes proposed particularly in areas where there is no mapping
- **All Councils** are likely to use the mapping either to amend existing or to inform their new schemes
- QRA has prepared templates to assist Councils i.e. Council resolution, new parts to the scheme and overlay templates
- DERM are supporting the mapping refinement where existing mapping or local knowledge exists
- Minister has agreed in principle to Minor Scheme amendment process thereby accelerating the process



PART 2 – Long term solution

Measures to support floodplain management in future planning schemes – Mid December 2011

Flood Study Template

- Needs to be outcome driven rather than via process or methodology
- Needs to be economic
- Fit for purpose

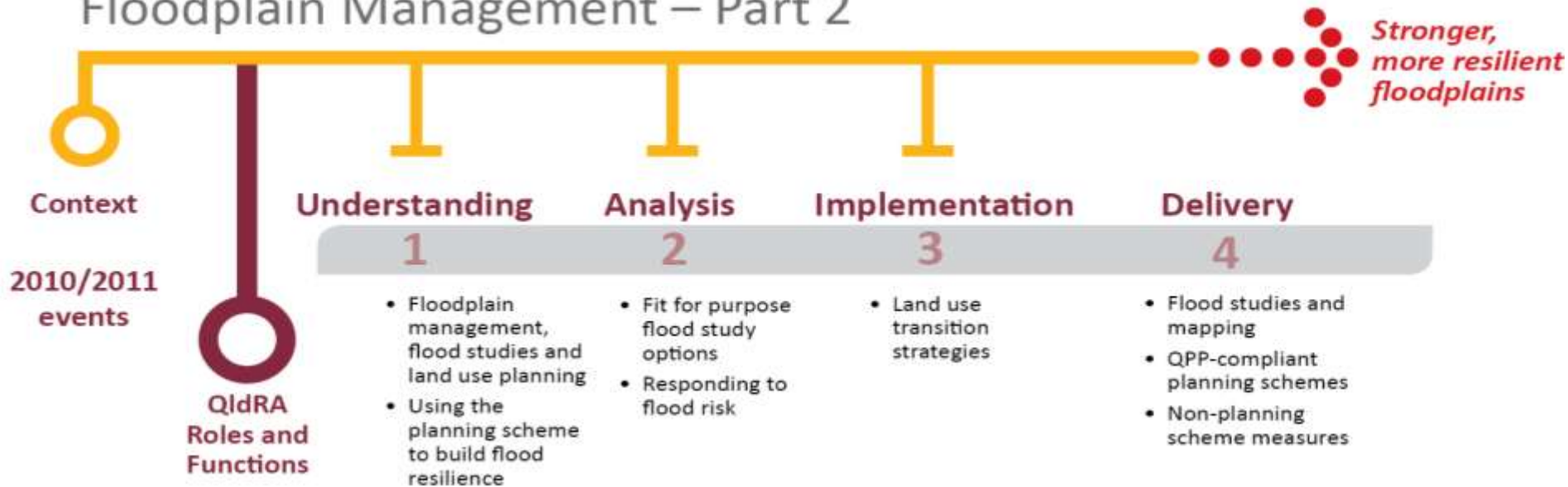
Queensland Planning Provisions

- new standardised approach in Qld for all new planning schemes – means consistency across the State
- Interim overlay and flood study to help inform the strategic planning process
- Transition strategies for land use zones



PART 2 – Long term solution

Floodplain Management – Part 2



PART 2 – Long term solution



Queensland Reconstruction Authority



**Operation
Queenslander**

Governing in trying times... Lessons learnt

- Having the right legislation is key to busting through red tape and removing unnecessary process
- Where there is a will there is a way
- Outcome driven
- Donations and industry support has been remarkable
- Collaboration is key
- Build awareness and capacity at all levels
- Ensure transition back to core government business – capitalise on the key partnerships
- Resilience and betterment are a must
- Unique opportunity in Queensland with new planning schemes being prepared.



Still plenty of work to be done but we are on the way to a stronger, more resilient Queensland

www.qldreconstruction.org.au

**Ms Kate Isles, Director,
Land Use Planning**

Kate.isles@qldra.org.au

