

Goondiwindi Regional Council

Natural Disaster Risk Management Plan

V1.0 June 2011



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Table of Contents

Preliminaries	5
Authority to plan	5
Approval of plan	5
Definitions and Abbreviations	6
1. Introduction	7
1.1 Purpose of plan	7
1.2 Scope of Plan	7
1.3 Key objectives.....	7
1.4 Local government policy for disaster management.....	8
1.5 Plan review arrangements.....	8
1.6 Integration with Council’s corporate, strategic and operational planning processes	8
1.7 Local Disaster Management Group (LDMG)	9
1.8 LDMG Operations	11
1.8.1 Functional arrangements.....	11
1.8.2 Local Emergency Co-ordination Groups.....	13
2. Disaster Risk Management.....	15
2.1 Community context	15
2.1.1 Geography and Land Use	15
2.1.2 Climate and weather.....	16
2.1.3 Population	16
2.1.4 Community capacity	17
2.1.5 Industry.....	19
2.1.6 Public buildings, spaces, and events	19
2.1.7 Critical infrastructure	20
2.1.8 Essential services	23
2.1.9 Hazardous sites.....	30
2.2 Hazards.....	31
2.2.1 Risk Management Methodology.....	31
2.2.2 Critical disaster risks	31
2.2.3 Mitigation of critical disaster risks	32
2.2.4 Next steps	33
3. Prevention.....	34
3.1 Building codes and building-use regulations	34
3.2 Legislation	34
3.3 Public education	34
3.3.1 Public Education	34
3.3.2 Public Information	35
3.4 Insurance incentives/disincentives.....	35
3.5 Land-use management initiatives.....	35
4. Preparedness	36
4.1 Event coordination	36

4.1.1	Primary	36
4.1.2	Secondary	36
4.2	Warning systems and public education	36
4.2.1	Warning and alerting systems.....	36
4.2.2	Public education	37
4.3	Response capability	38
4.3.1	Local Disaster Management Group Capability	38
4.3.2	District Disaster Management Group capability	39
4.3.3	Agency capability	39
4.4	Resource list	40
5.	Response.....	41
5.1	Activation	41
5.2	Accessing support.....	41
5.3	Functional plans	42
5.4	Threat specific arrangements	42
5.5	Emergency action plans.....	42
5.6	Initial impact assessment	43
5.7	Contact details.....	43
5.8	Risk Maps	43
5.9	Disaster management training register	43
6.	Recovery	44
6.1	Queensland Disaster Relief and Recovery Arrangements.....	44
6.1.1	Infrastructure.....	44
6.1.2	Community	44
6.1.3	Economic	45
6.1.4	Environment	45
6.2	Recovery Functional Plan (sub plan).....	45
Attachment 1:	Risk Assessment Tools	46
Measures of Effectiveness.....		46
Measures of Consequence (or Impact).....		47
Measures of Likelihood		49
Risk Assessment Matrix		50
Attachment 2:	Disaster Risk Register	51
Attachment 3:	Treatment Action Plans (example only).....	58
Attachment 4:	Response Capability	59
Attachment 5:	Resource List	60
Attachment 6:	Local Disaster Management Contact Details	61
Attachment 7:	Risk Maps	62
Attachment 8:	Disaster Management Training Register.....	63
Attachment 9:	Stakeholder Consultation Summary	64
Attachment 10:	Summary of Public Submissions	65

Plan Development Details

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Preliminaries

Authority to plan

Section 57(1) of the *Disaster Management Act 2003* requires all local governments to prepare a plan for disaster management in the local government's area. In accordance with this requirement, Goondiwindi Regional Council has developed the following plan in consultation with key agencies and stakeholders.

Approval of plan

This Plan has been approved by Council in accordance with the *Disaster Management Act 2003* Section 80(1)(b).

Adopted by Council on: xx/xx/2011

Council Minute reference: insert

Signatures:

Peter Stewart, Chief Executive Officer

Definitions and Abbreviations

ABS	Australian Bureau of Statistics
AEP	Annual Exceedance Probability
ANCOLD	Australian National Committee on Large Dams
ARI	Average recurrence interval
BCA	Building Code of Australia
BoM	Bureau of Meteorology
CDRS	Counter Disaster and Rescue Services
DCC	Disaster Coordination Centre
DDMG	District Disaster Management Group
DERM	Department of Environment and Resource Management
DMP	Disaster Management Plan
DTMR	Department of Transport and Main Roads
DNR&M	Department of Natural Resources and Mines
DON	Director of Nursing
EMQ	Emergency Management Queensland
GRC	Goondiwindi Regional Council
IFF	Imminent Failure Flood
LCD	Local Counter Disaster (Plan/Committee)
LDMG	Local Disaster Management Group
QAS	Queensland Ambulance Service
QPS	Queensland Police Service
QFRS	Queensland Fire and Rescue Service
QRMC	QRMC Risk Management Pty Ltd (Appointed Consultant)
RACQ	Royal Automobile Club of Queensland
RFS	Rural Fire Services
SAG	Study Advisory Group
SES	State Emergency Service

1. Introduction

1.1 Purpose of plan

The aim of the Goondiwindi Regional Council (GRC) Natural Disaster Risk Management Plan is to increase community safety through the identification, analysis, evaluation and treatment “of disaster risks” from a preventative, mitigation perspective within the area of the GRC jurisdiction. Emphasis is placed on the four (4) emergency management principles of Prevention, Preparedness, Response and Recovery.

This aim will be achieved by:

- ▶ Identifying hazards and sources of risk with reasonable potential to impact the communities of the GRC local government area;
- ▶ Analysing those risks; and,
- ▶ Determining the Treatment Options/Strategies to reduce the likelihood and/or impact of the risk, including consideration of existing control or mitigation measures.

The most significant risks faced by GRC communities are related to the hazards of major flooding resulting from extreme flows in one or more of the major and minor river systems that constitute the Border Rivers region in which the GRC is located; these events have the capacity to seriously impact not only the three major towns (Goondiwindi, Inglewood and Texas), but also significant parts of the surrounding rural areas.

1.2 Scope of Plan

This plan is limited to consideration of hazards requiring a significant coordinated (multi-agency) response. Hazards that can be managed by Council alone (for example, minor road closures resulting from traffic accidents and/or landslips) are not part of this plan.

1.3 Key objectives

The GRC Natural Disaster Risk Management Plan aims to achieve the following objectives:

- ▶ Develop a comprehensive series of documents detailing the identified hazards and potential risks and treatment strategies for the following elements:
 - People
 - Property
 - Lifelines and infrastructure
 - Environment

- Socio-economic.
- ▶ Provide the GRC communities and stakeholders with an opportunity to become involved in the study and to assist where possible in providing comments and historical information on past events. One-on-one meetings have been held with most of the key stakeholders and agencies and an opportunity provided for verbal and written public responses. (The outcome of these consultations have been summarised as appendices to this plan.)
- ▶ Whilst strictly speaking, this plan is concerned with natural disasters (flood, fire, storm, etc.), it does briefly consider man made disasters, such as major traffic accidents, pandemic, exotic animal and plant diseases, as the management of these is largely undertaken by the state government agencies (QPS, QAS, QFRS and Qld Health for example).
- ▶ To address the issue of cross border arrangements to be made at State Government level relating to cross Qld/NSW border coordination and information distribution relating to:
 - Dam release data
 - Road conditions and road closures (essential for evacuation planning), and
 - Weather and river height warning informationare also considered.

1.4 Local government policy for disaster management

This Plan was developed in accordance with the Queensland State Government's "Queensland Disaster Management Planning Guidelines 2005 for Local Government".

GRC is aware of and compliant with its responsibilities in respect of National and State Disaster Management Plans.

1.5 Plan review arrangements

The plan will be reviewed and exercised annually as per section 59 of the *Disaster Management Act 2003* by the LDMG to ensure that all information is current and that treatment strategies and actions are appropriately addressed. It may also be revised as determined by exercise, operations or procedural changes and requirements. Changes to the plan shall be proposed and recommended by the LDMG and submitted to council for approval.

1.6 Integration with Council's corporate, strategic and operational planning processes

This plan expands upon and reinforces the GRC's Disaster Management Plan 2010.

Adequate disaster management planning and awareness is an essential component of Council's corporate, strategic and operational planning. A coordinated and sufficiently resourced delivery of emergency services across all areas benefits the entire community. All former Councils that make up the GRC (Goondiwindi Town Council, Waggamba Shire Council and Inglewood Shire Council) have demonstrated their commitment to the disaster management process through previous natural disaster, flood and other studies. This plan is a continuation and consolidation of that commitment.

1.7 Local Disaster Management Group (LDMG)

The *Disaster Management Act 2003* Section 29 requires the establishment of a Local Disaster Management Group (LDMG) to undertake the functions outlined in Section 30 of the Act.

The LDMG membership is detailed below.

Table 1.1 – LDMG membership

Organisation	LDMG Position/Role
Goondiwindi Regional Council	Chairperson In the absence of the identified councillor the deputy chair or otherwise nominated shall assume the role of chairperson
Goondiwindi Regional Council	Local Disaster Coordinator/CEO In the absence of the identified councillor the deputy chair or otherwise nominated shall assume the role of chairperson
Goondiwindi Regional Council	Deputy Chairperson/ Media Officer In the absence of the identified councillor the Local Disaster Coordinator shall assume the role
Goondiwindi Regional Council	Director of Technical Services
Emergency Management Queensland	Area Director
Queensland Police Service	Officer in Charge – Goondiwindi
Queensland Fire & Rescue Service	Area Director – Goondiwindi
Queensland Ambulance Service	Officer in Charge – Goondiwindi
Queensland Health	D.O.N. – Goondiwindi Hospital

The names and contact details of current serving members of the LDMG are classified by the LDMG as classified information (see Attachment 6)..

Contact with the LDMG or individual members of the LDMG in the event of a disaster can be made as shown in section 4.1, page 37, or Attachment 6, page 64 of this document.

Specialist Advisors

The following members whilst not regarded as “core” members of the LDMG, may be called upon to give specialist advice about the role and capabilities that their organisation may be able to provide to the LDMG.

Table 1.2 – Specialist Advisors to the LDMG

Organisation	Position/Role
Church Groups	Local church members
Community Groups	Lions, Apex, Rotary, Red Cross, etc
Essential Energy	Area Manager
Queensland Police Service	DDC Inspector of Police - Warwick
DPI and DERM	Local representative
Emergency Management Australia	On duty operator
Environment protection Agency	Area Director
Queensland Ambulance Service	Officers in Charge – Inglewood and Texas
Queensland Police Service	Officers in Charge – Inglewood, Texas, Yelarbon and Talwood
Queensland Fire & Rescue Service	Auxiliary Captains – Goondiwindi, Inglewood, Texas, Yelarbon
Queensland Fire & Rescue Service	QFRS Fire Wardens
Education Queensland	Schools Principals
SES	Local controllers – Goondiwindi, Inglewood, Texas, Yelarbon and Talwood
Telstra	Area supervisor
Local Welfare Groups (inc Aged Care providers)	Department of Communities. Blue Care, Red Cross, Lifeline, Kaloma Home for the Aged, Goondiwindi, Casa Mia Home Hostel, Inglewood

Communication requirements and protocols for the LDMG to inform Council, the Disaster District and other levels of the State Disaster Management System of disaster management outcomes are as follows:

Table 1.3 – Disaster communication protocols

Required communications	LDMG officer responsible	Target (position and agency)	Timeframe	Preferred method
In preparation by LDMG				

1.8 LDMG Operations

1.8.1 Functional arrangements

1.8.1.1 Meetings

Section 59 of the *Disaster Management Act 2003* requires plans to be reviewed and exercised annually. The GRC Local Disaster Management Group will meet:

Under normal circumstances – at least twice yearly in the lead up to and following each flood season or as deemed necessary by the Chairperson to facilitate compliance with section 59 of the Disaster Management Act 2003; and

Under emergency / disaster conditions - at the request of either the Chairperson or Local Disaster Coordinator of the Local Disaster Management Group, their delegate, or at the request of the District Disaster Coordinator.

1.8.1.2 Quorum

The Queensland Disaster Management Act section 40 requires the LDMG to have a quorum when it conducts a meeting (fifty percent of membership plus one). Given the large area covered by councils' area of responsibility, the nature of disasters isolating some members and the requirement of some group members to attend in a response capability there will be times when some group members may not be able to physically attend a meeting. If a proxy or appointed delegate cannot attend in the members place, then electronic communications can be used between the members present and those in the field to achieve a quorum. If this course of action is required, it is to be recorded in the minutes and the absent member/s is to endorse the minutes as correct once they are able to attend the meeting and view the minutes as an accurate account of deliberations held and decisions made.

1.8.1.3 Notification of membership

Each year the Local Disaster Co-ordinator of the LDMG shall advise the Executive Officer of the SDMG of the composition of the Local Disaster Management Group. A copy of this advice shall be forwarded to the District Disaster Coordinator in Warwick.

1.8.1.4 LDMG Functions

The Local Disaster Management Group has the following functions under Section 30 Disaster Management Act 2003 for its area:

- ▶ to ensure that disaster management and disaster operations in the area are consistent with the strategic policy framework for disaster management for the State;
- ▶ to develop effective disaster management, and regularly review and assess the disaster management capability;
- ▶ to help the local government for its area to prepare a local disaster management plan;
- ▶ to identify and provide advice to the district group about, support services required by the local group to facilitate disaster management and disaster operations in the area;
- ▶ to ensure the community is aware of ways of mitigating the adverse effects of an event, and preparing for, responding to and recovering from a disaster;
- ▶ to manage disaster operations in the area under policies and procedures decided by the State group;
- ▶ to provide reports and make recommendations to the relevant district group about matters relating to disaster operations;
- ▶ to identify, and coordinate the use of, resources that may be used for disaster operations in the area;
- ▶ to establish and review communications systems in the group, and with the relevant district group and other local groups;
- ▶ to ensure information about a disaster in the area is promptly given to the relevant district group;
- ▶ to perform other functions given to the group under this Act;
- ▶ to perform a function incidental to a function mentioned above.

1.8.1.5 Roles and Responsibilities

The roles and responsibilities of the lead agency in relation to each threat are generally contained in the relevant agency's Standard Operating Procedures. For each Critical Disaster Risk identified in section 2.2.2 Critical Disaster Risks, the lead agency or risk custodian is nominated. A non-exhaustive summary of the roles of the LDMG, lead agency and those agencies likely to support the lead agency has been prepared for each phase of Disaster Management to illustrate the activities that should be considered. These lists are included in the relevant "duty cards" for each agency that form a part of the operational guidelines.

The LDMG is producing a set of simple duty cards for each type of threat for each nominated agency, that will be continually updated to indicate the actions that should be undertaken in each phase of disaster management. The preparation of these cards is now well advanced by the LDMG member agencies, especially in respect of the major nominated hazard – flooding.

A non-exhaustive summary of the roles of the LDMG, lead agency and those agencies likely to support the lead agency has been prepared for each phase of Disaster Management to illustrate the activities that should be considered. These lists are included in the relevant duty cards for each agency that form a part of the operational guidelines.

1.8.2 Local Emergency Co-ordination Groups

Council has established Local Emergency Co-ordination Groups (LECG) to facilitate disaster management and disaster operations within the Inglewood and Texas areas.

These are the key groups charged with co-ordinating responses to major emergency events and initially managing the emergency event within the local districts of Inglewood and Texas in a functional manner and also to act as a liaison for the Local Disaster Management Group.

1.8.2.1 Purpose

The purpose of the Local Emergency Co-ordination Group is to establish a core group of people within the local community, who possess the local knowledge and expertise to co-ordinate disaster management operations for the Inglewood and Texas areas in a functional manner and to act as a liaison for the Local Disaster Management Group.

1.8.2.2 Role

The LECG has been identified as the key group charged with co-ordinating responses to major emergency events and initially managing the emergency event within the local district. The LECG is ideally placed to provide specific Disaster Management at the community level given its local knowledge, expertise and understanding of social, environmental and economic issues for their local area.

1.8.2.3 LECG Functions

The functions of the Inglewood and Texas LECGs will include, but is not limited to, the following:

- ▶ To ensure that disaster management and disaster operations in the Inglewood and Texas areas are consistent with the Goondiwindi Regional Council's Disaster Management Plan and ultimately the relevant legislation;
- ▶ To develop effective methods of disaster management co-ordination and regularly review and assess Council's disaster management plan and associated operational guides;
- ▶ To identify, and provide advice to the LDMG Chairperson regarding support services required by the LECG to facilitate disaster management and disaster operations within the Inglewood and Texas areas;
- ▶ To assist the LDMG in raising community awareness of ways of mitigating the adverse effects of an emergency event, and preparing for, responding to and recovering from an emergency event;
- ▶ To manage disaster operations in the area under policies and procedures decided by the Local Disaster Management Group, their agencies Standard Operating Procedures and State legislation;

- ▶ To provide reports and make recommendations to the LDMG Chairperson regarding matters relating to disaster operations;
- ▶ To identify and co-ordinate the use of resources that may be used for disaster operations in the area;
- ▶ To establish and review communication systems within the LECG, the LDMG and also within the districts of Inglewood and Texas, for use in an emergency event;
- ▶ To ensure information about a disaster or major incident in the area is promptly provided to the LDMG Chairperson and / or Local Disaster Coordinator.
- ▶ To perform any function incidental to a function mentioned in the points above.

Each of the LECG's will prepare a set of guidelines to govern their activities in each of the planning, preparation, response and recovery phases of disaster management.

2. Disaster Risk Management

2.1 Community context

2.1.1 Geography and Land Use

The Goondiwindi Regional Council area (GRCA) is located in the mid and lower sections of the Queensland Border Rivers Catchment and is predominantly supported by cropping and grazing industries. The east of the region includes the townships of Texas, Inglewood and Yelarbon and consists of sub-catchments of the Macintyre Brook and Dumaresq River. The eastern part of the region is regarded as midlands or slopes and produces citrus, lucerne, horticulture, olives, grain crops and grazing. Irrigation water is pumped directly from the above streams and applied generally via micro, sprinkler and over-head irrigation systems. Regulated water is made available from Coolmunda Dam, near Inglewood and Glenlyon Dam, east of Texas.

The western part of the region includes the townships of Goondiwindi and Talwood and is dominated by broad-scale dryland grain, irrigated cotton and other crop production, and grazing. This area is classed as lowlands or plains and is fed by the Macintyre and Weir Rivers, with extensive areas of natural floodplain. Irrigation water is pumped direct from these rivers, as well as captured via floodplain harvesting, with water stored in on-farm storages and major on-farm infrastructure. Furrow irrigation is the predominant irrigation method, with some over-head irrigation.

The floodplain areas of the Macintyre Brook and Dumaresq Rivers in the east and the Macintyre River and Weir Rivers in the west and their tributaries are prone to flooding and significant damage to both public and private infrastructure can occur. The recent flood of 2011 saw significant damage in the Texas area as a result of rainfall at the top of the catchment, to both council infrastructure of roads, floodways, culverts and bridges and private infrastructure including fencing, irrigation equipment, pumps and farm buildings, as well as significant crop losses. The western end of the region saw damage to roads, crops, and other irrigation and transport infrastructure. Isolation due to flood waters was extensive and reasonably long-lived, with periods of isolation being longer in the west of catchment due to the reduced slope.

Large areas of the GRCA's vegetation have been modified by clearing and by cropping and the grazing of stock. Clearing ranges from complete removal of the vegetation for cultivation to selective thinning of trees and shrubs to increase palatable grass species. Stock preferences and the tolerance of plants to grazing affect the composition of the ground flora and have brought about changes to the vegetation type and composition over large areas of the GRCA.

There is, however, a sustainable forestry industry in State Forests around Inglewood, where Cyprus and hardwood has been harvested for over 100years.

2.1.2 Climate and weather

The climate of the GRCA is dominated by a system of high pressure cells (anticyclones) that move across central Australia from west to east. To the north of the high pressure system lies the equatorial low pressure system, and to the south lies the Antarctic low pressure system. Both these low pressure systems are rain bearing. The seasonal fluctuation of the high pressure cells follows that of the sun, that is, moving north in winter and south in summer. It is this movement of the system that defines the climate of the seasons of the GRCA.

Winter is dominated by stable air masses, ensuring fine, cool days with cool to cold nights. Occasionally cold fronts from the Antarctic lows enter between successive high pressure cells, allowing cool, unstable air to penetrate from the south-west. The cool, unstable air causes rain, and is the chief provider of winter precipitation.

As the high pressure system moves south in summer, a line of troughs is formed over central Queensland. Moist, unstable, tropical air penetrates along the eastern edge of these troughs causing storm activity. Rain depressions move into the GRCA from the north if the easterly movement of the high pressure cells is stalled. Rain depressions deliver peak rainfall to the area.

Climate statistics for Goondiwindi are obtained from the Goondiwindi Post Office, though there are also recording stations at Goondiwindi Airport and Inglewood (2). The major statistics of the climate at Goondiwindi are:

- ▶ Rainfall: 621mm per annum (113 years of record), more or less evenly distributed throughout the year, but with a maximum in the summer months of December to February. There is an average number of rain days (>1.0mm) of around 5 to 6 per month.
- ▶ Temperature: Mean annual maximum temperature is 26.7°C and mean annual minimum temperature is 13°C, though maximums frequently exceed 35°C in summer.

Severe storms can occur in summer and the highest monthly rainfall recorded at the station was 374.2mm in February 1953, well above the February average of 69mm. Similarly, the highest maximum temperature of 45.2°C was recorded in both December 1898 and January 1899, well above the average maximums for those months.

2.1.3 Population

The data included in this and the following sections is derived both from the 2006 Australian Bureau of Statistics (ABS) and a report prepared for Goondiwindi Regional Council (GRC) in June 2009 by Jim Cavaye, entitled "*Community Economic Plan*". Both of necessity draw upon data from the three former Councils (Goondiwindi Town Council, Inglewood and Waggamba Shire Councils), In addition to the three main towns – Goondiwindi, Inglewood and Texas, there are several smaller communities considered, including Tarawera, Talwood, Bungunya, Toobeah, Lundavra, Yagaburne, Yelarbon, Cement Mills and Watson Crossing. The integrated data was cross checked against the consolidated Goondiwindi Regional Council profile prepared by the Office of Economic and Statistical Research of the Queensland Government in February 2009.

The total population of the Goondiwindi Regional Council Area (GRCA) was virtually unchanged from 1981 to 1996 followed by consistent actual and expected growth from 1996 to 2026, with the overall growth rate from 1981 to 2026 expected to be 0.53% per annum., leading to an expected population of 12,340 by 2026. The estimated residential population as at 30 June 2007 was 10,785 persons.

Population growth is occurring, and is projected to continue to occur in the former Waggamba Shire and in the town of Goondiwindi. Conversely, the population of the former Inglewood Shire has declined consistently from 1981 to 2006. It is projected to be maintained at between 2660 and 2690 persons from 2006 to 2026.

The populations of the three major towns were: Goondiwindi 6,110; Inglewood 849; Texas 721.

2.1.4 Community capacity

2.1.4.1 Dwellings

The 2006 census reveals that there were 1959 private dwellings in Goondiwindi town, (of which 1368 were separate houses); 500 private dwellings in the former Waggamba Shire (389); 1337 in the former Inglewood Shire (1067).

There are also a significant number of other short-term accommodation options including:

- ▶ Caravan parks (Goondiwindi – 3; Inglewood – 2; Texas, Yelarbon and Boggabilla (NSW) – 1 each.
- ▶ Hotels/Motels (Goondiwindi – 4; Inglewood – 3; Talwood, Texas, Toobeah and Yelarbon – 1 each.
- ▶ Motels (Goondiwindi – 10; Inglewood – 2; Texas – 1; Boggabilla (NSW) – 1.

For the 12 months to 30 September 2008, there were 47 dwelling units approved in residential buildings, which was nearly 81% of the total building value in the GRCA.

2.1.4.2 Families

In 2006, the distribution of families was as follows:

Table 2.1 – Distribution of families

Former Shire/Town	No of Families	Families with children	Families without children	Single parent families
Goondiwindi	1,159	491	463	176
Waggamba	342	190	133	16
Inglewood	694	299	315	74

2.1.4.3 Age characteristics

The age of the population of the GRCA region shows a typical regional profile, with a distinct “youth gap” – the under-representation of people from the age of 15 to 34 years. This is typical of Australian

regions where young people often leave to gain education and employment. There are a few statistics relating to age distribution that may have implications for emergency risk management as follows:

- ▶ Residents of the former Inglewood Shire have a considerably higher median age (43 years) than residents of the former Waggamba Shire (35 years) and Goondiwindi town (34 years).
- ▶ The population of the former Waggamba Shire appears to have a relatively high proportion of families and children. This is further demonstrated by the number (4) of very small state primary schools in this area.
- ▶ For GRCA as a whole, the estimated number of aged persons (65+) was 1,523 or 14.1% of the population

2.1.4.4 Ethnicity

The GRCA has a very high proportion of residents born in Australia – Goondiwindi town (86%); Waggamba Shire (89%) and Inglewood Shire (88%). The principal language spoken at home is similarly dominated by English – Goondiwindi town (90%); Waggamba Shire (92%) and Inglewood Shire (93%). For the GRCA as a whole, English was the principal language of all but 96 persons.

2.1.4.5 Workforce

The population of GRCA is relatively highly employed with a pattern of employment that shows that people are slightly more employed than in Queensland generally. 96.3% of the labour force is employed which is similar to that for Queensland (95.3%). Full time workers represent 65.2% of the labour force with 61.6% of Queensland workers employed full time. The proportion of people employed part time (25.0%) is also slightly less than for Queensland (27.7%). The unemployment rate in GRCA (3.7%) is lower than that for the state (4.7%).

2.1.4.6 Income

The pattern of family income is similar in the GRCA to that in Queensland generally. However, there is a higher proportion of families with middle to lower incomes and a lower proportion of families with higher incomes compared to families elsewhere in Queensland. In 2006, 60.9% of GRCA families earned less than \$1200 per week, compared to 53.3% of Queensland families.

2.1.4.7 Community Facilities

Cultural facilities in the Goondiwindi Regional Council area include museums, tourist information centres, PCYC and indoor sports centres, community halls, rodeo grounds, golf and bowls clubs, shooters clubs, race tracks and sports grounds.

The Council takes considerable pride in supporting the public image of the GRCA, which is one of the most stable Councils in the State.

The nature of rural production requires a mix of local and a mobile workforce with some reliance on casual staff during peak operating/harvesting times.

The Council is seen as progressive and competitive and willing to work closely with the rural sector and neighbouring Councils to further the Regional interests.

There are generally good services and facilities; for example there are 12 doctors in Goondiwindi and a medical centre in Inglewood.

Blue Nurses, Meals on Wheels, Senior Citizens, Lions, Rotary and the RSL service the GRCA.

A full array of Christian denomination churches is available in the GRCA.

There are libraries and swimming pools in each of the three major centres and a comprehensive array of other sporting and cultural amenities.

There is a high degree of professional recognition of the roles of the respective parties involved in community affairs and emergency service provision. The services appear to be well regarded by the community served.

2.1.5 Industry

Employment in the GRCA is highly concentrated in the agriculture and forestry sectors (the Community Economic Plan shows that 29.4% of the workforce is engaged in these sectors). There are, for instance, some 60 workers employed in the Cyprus forestry industry near Inglewood. These two sectors are followed by retail (12%), health care and social assistance (7.9%) and construction (6.8%). Manufacturing, by contrast accounted for less than 5% of the employed workforce at the 2006 census, so that it can be said that “industry” is a very minor contributor to the region’s economy. While there has been a marked decline in employment in agriculture and forestry over the past decade, agriculture continues to dominate the economy of the GRCA.

At the time of the 2006 census, the unemployment rate for the GRCA was 3.7%, below that of Queensland as a whole (4.7%)

2.1.6 Public buildings, spaces, and events

2.1.6.1 Buildings

A brief review of GRCA urban residential housing (Goondiwindi, Inglewood, Texas, Talwood Toobeah and Yelarbon), including houses and other dwelling units reveals a range of age across the continuum with older residences in the smaller locales and more new development in Goondiwindi. There are some substantial masonry and heritage buildings in the town, such as several of the churches and the Victoria Hotel. There is minimal rural residential development in the GRCA.

There are several caravan parks and a large number of motels in Goondiwindi and more than adequate numbers of all accommodation types in the towns and villages.

2.1.6.2 Public facilities

A review of commercial facilities including retail businesses, offices, shops, manufacturing and related secondary industries, storage facilities, Council facilities, transport infrastructure and fuel depots revealed buildings dating from the early 1940's and earlier, to more recent years, with a substantial level of pride being shown, through preservation, renovation and maintenance together with provision of facilities for recreation and the tourist trade. The standard of care of the parks and gardens maintained by the Council is particularly high.

There is a community centre (Goondiwindi Waggamba Community Cultural Centre which can cater for a wide range of functions with a Main Hall, Meeting Rooms, Foyer, Kitchen, Bar Area, Stage and beautiful grounds suitable for any outdoor occasion.

The local Disaster Management Plan (June 2010) specifically refers to the development of an evacuation sub plan (Evacuation and Welfare Sub Plan), which when available, will identify suitable evacuation centres in each of the main localities. Those previously identified in Goondiwindi include the Community Cultural Centre and the Golf Club clubhouse, as both of these have immunity against even very low probability floods.

2.1.7 Critical infrastructure

2.1.7.1 Roads

The Goondiwindi area is traversed by a number of major roadways. Goondiwindi is also a major entry point from NSW for heavy vehicles and wide loads and experiences a significant volume of heavy vehicle traffic. The National Highway comprises the routes of the Newell (in NSW) and the Gore Highways and carries significant volumes of freight. The majority of roads across the council area are sealed.

The Cunningham Highway heads north east towards Warwick, passing through Yelarbon and Inglewood. The Leichhardt Highway heads north west and branches off through the township of Moonie and heads towards Miles. The Gore highway branches off the Leichhardt Highway approximately 20kms from Goondiwindi and travels to the city of Toowoomba. The Barwon Highway travels west through Toobeah and Talwood heading to St George. The road south heads into NSW and becomes the Newell Highway travelling through the small town of Boggabilla 10kms south and heading to the rural centre of Moree. There are a number of other main roads that connect towns both within and out of the region. Widespread and extensive flooding of the road network can occur at any time, particularly during the flood season.

2.1.7.2 Rail

Goondiwindi is serviced by the QR National (QRN) South Western network which runs from Toowoomba to Thallon via Warwick. Products carried are primarily grain and containerized freight.

There are sidings (mainly Graincorp) at Inglewood, Whetstone, Yelarbon, Kurumbul, Carrington, Hunter, Gooray, Toobeah, Bungunya and Talwood, as well as at Goondiwindi.

2.1.7.3 Airports

The Disaster Management Plan identifies the following airports within the GRCA:

Goondiwindi

Airport used by medical, private and commercial aircraft.

There are no RPT services in operation from the airport. The facility offers both sealed and unsealed airstrips with the main strip equipped with lighting.

Talwood

An unsealed airstrip is available for use by medical, private and commercial aircraft but not used often. There are no RPT services in operation from the airport and it is unsuitable for same. The facility is not equipped with lighting.

Inglewood

An airstrip is available for medical, private and commercial aircraft.

There are no RPT services in operation from the airport. The airstrip is sealed bitumen and is equipped with solar lighting.

Texas

An airstrip is available for medical, private and commercial aircraft.

There are no RPT services in operation from the airport and it is unsuitable for same. The airstrip is grass and it is not equipped for night landing.

ALA

There are other Approved Landing Areas and private strips across the District that may be available in times of disaster.

2.1.7.4 Electricity Supply

The power supply to the GRCA is provided from Country Energy, NSW (now Essential Energy) under contract arrangements with Ergon Energy, Queensland. The Essential Energy Area Manager is located in Goondiwindi and is identified in the Local Disaster Management Group as a key stakeholder.

Discussions with him revealed that:

- ▶ Ergon 132KV line comes very close to Troy Ave (the Essential Energy depot)
- ▶ Essential Energy operates during natural disasters according to Procedural Guideline Manual – Managing Regional Emergencies – Northern Region (this is a controlled document).
- ▶ Essential Energy is not on LDMG but receive minutes of meetings and are well informed.

- ▶ Earliest possible notification of emergencies is necessary so that (for example) generators could be brought in from NSW.
- ▶ Essential Energy has a manual to identify where available generators, fuel supplies, etc. are located.

2.1.7.5 Telecommunications

The Disaster Management Plan (pages 22 & 23) notes that the following communication systems are available:

Radio systems

- ▶ SES/ESU Radio Net: HF and UHF system
- ▶ QPS Radio Net: HF, UHF system and satellite phone
- ▶ QAS Radio Net: HF, UHF and VHF system and satellite phone
- ▶ QFRS (Rural Fire Division): VHF and UHF system
- ▶ QFRS (Urban Division): UHF and VHF system
- ▶ Goondiwindi Regional Council: VHF system
- ▶ Goondiwindi Hospital: UHF system
- ▶ Inglewood Hospital:
- ▶ Texas Hospital:
- ▶ Essential Energy: satellite phone, HF, UHF and VHF system

Note: The secure systems operated by the individual response agencies do not currently have the ability to communicate directly with each other e.g. QPS to QFRS

Telephone Systems

- ▶ Phone
- ▶ Mobile phones – including Telstra, Optus & Vodafone
- ▶ Satellite phones
- ▶ Internet dial up and broadband

Electronic/media communications

- ▶ Television-All five free to air stations
- ▶ Pay TV-Pay and satellite TV available to subscribers
- ▶ Radio-AM and FM radio stations
- ▶ Print-Goondiwindi Argus, Macintyre Gazette, Toowoomba and Brisbane papers available
- ▶ Internet/computer sources

2.1.7.6 Water Supply

Treated river supplies from the Macintyre River are used in Goondiwindi. Treated supplies from Macintyre Brook are used in Inglewood, from Dumaresq River in Yelarbon and from Weir River in Talwood. Texas water supply is a combination of treated water from the Dumaresq River and bore

water. Dams and bores are used in the Toobeah and Bungunya areas. Rural properties operate bores, dams and rain water tanks.

2.1.7.7 Waste Removal and Effluent

Council is responsible for domestic waste management services and recycling services.

The urban areas of Goondiwindi, Inglewood, Texas, Talwood and Yelarbon operate on a package sewerage treatment system. Other rural properties and towns utilise septic systems.

2.1.8 Essential services

2.1.8.1 Economic Assets

Whilst there are definite improvements in infrastructure that need to be made, the GRCA is generally well served in transportation terms.

The GRCA is served with the necessities of daily living, all within a reasonable distance throughout the area. All townships have general stores with Goondiwindi and Inglewood also providing a full range of commercial services. Secondary industries, which support primary production, are evident in Goondiwindi. There are generally good services and facilities; for example there are 12 doctors in Goondiwindi and a medical centre in Inglewood. However, smaller communities have limited services such as limited freight services to Talwood and limited services in Inglewood and Texas.

The Council recognises that whilst Goondiwindi, Inglewood and Texas, the major population centres, are a reasonable distance from each other, travel time is not a significant consideration for local Emergency Management measures. All of the three centres have the SES, QAS, QF&RS and QPS located there, as well as fully equipped hospitals.

There are enthusiastic, but relatively small business development organisations in the GRCA, including Borders Rivers Chamber of Commerce, Texas Qld. Inc. and Inglewood Chamber of Commerce.

2.1.8.2 Emergency Services

The GRC has developed a Local Disaster Management Plan (2010).

The Emergency Management Queensland, Area Director, South West Region is based in Toowoomba.

The State Emergency Service (SES) has centres in Goondiwindi, Inglewood and Texas. In the context of the Disaster Management Plan, the SES takes a lead role with Queensland Police, in natural disasters that relate to Flooding, Storms, Cyclones, Earthquakes/Tremors and Bushfires, key hazards identified by the SAG. The service is well organised and has an experienced though small number of volunteers. The service receives strong support from the Council and local community. The SES has well-established centres (above) in the three major towns and a range of equipment and resources to meet the expected needs within the GRCA and can call on adjacent Councils in both Queensland and New South Wales in times of crisis.

Discussions with the SES co-ordinators, revealed that:

- ▶ SES Goondiwindi/Yelarbon/Talwood: 30 volunteers, with 12 to 14 being described as dedicated.
- ▶ SES Inglewood/Texas: 29 Inglewood, 10 Texas – Texas Branch reports to Inglewood.
- ▶ During emergencies provide support to Police, QFRS, QAS and GRC as required – chiefly in traffic management, provision of supplies to farmers and isolated communities, evacuation support, sand bagging prior to and during floods, monitoring water levels at key locations, covering damaged roofs with tarpaulins, etc.
- ▶ Training is conducted weekly and there have been regular table-top exercises.
- ▶ Call outs are regular, averaging 1-2 per week, mainly for traffic accidents and storm damage (apart from major disasters).
- ▶ There is some concern as to amount of administration work that needs to be by a purely volunteer service and some consideration could be given to the appointment of a paid co-ordinator to handle the overall administration of the service in GRCA.

2.1.8.3 Queensland Police Service (QPS)

The QPS has stations at Goondiwindi, Inglewood, Texas, Yelarbon and Talwood.

The details of the manning and operation of these stations are set out below:

Goondiwindi (inc. Yelarbon and Talwood)

Number of Police staff	14 General, 3 Traffic, 2 CID, 1 PCYC, 2 Police Liaison Officers
Number of support staff	3 Admin
Relationship to other police stations in GRCA	All report to Snr Sgt– Texas 1 Sgt, 1 Senior Constable; Talwood 1 Snr Constable, Yelarbon 1 Snr Constable; Inglewood 1 Sgt, 2 Snr Constables Note: Up until now, Texas reported to Stanthorpe
Role during Natural Disasters/Emergencies	Police have authority to activate Evacuation Plan, Major Traffic Accident Plan, etc
Role during evacuations	Overall command, but use SES, QFRS, QAS, GRC as support
Average number of call-outs	On natural disasters, very rare – mainly major traffic accident

Inglewood

Number of Police staff	3 – 1 Sgt, 1 Snr Constable, 1 Constable
Number of support staff	1 P/T
Relationship to other police stations in GRCA?	See Goondiwindi (above)
Role during Natural Disasters/Emergencies	Evacuation

Role during evacuations	Inglewood has about 6 hours warning of flooding from Coolmunda Dam
Average number of call-outs	Mainly traffic accidents, traffic enforcement and disturbances

Texas

Number of Police staff	1 Sgt, 1 Snr Constable
Number of support staff	1 Part time
Relationship to other police stations in GRCA?	Currently reports to Stanthorpe – to change to Goondiwindi shortly
Role during Natural Disasters/Emergencies	Evacuation, especially in “old” Texas – river flats.
Role during evacuations	See above

2.1.8.4 Queensland Fire and Rescue Service (QFRS)

Responsibility for fire and rescue services is divided between Urban and Rural, which are structured quite separately as set out below:

Urban

Number of fire trucks	Goondiwindi 3, Inglewood 2 (under Warwick), Texas 1, Yelarbon 1
Number of Fire Brigade staff	Texas 6, Inglewood 8, Yelarbon 4, Goondiwindi 12 – all Auxiliaries – paid only when on call for fire or rescue, or for 2 hours/week training
Number of support staff	Goondiwindi 1 Admin.
Relationship to Bush Fire Brigades	Work together well in smaller centres
Average number of call-outs	Goondiwindi 160 P/A, Inglewood 100, Texas 4-6, Yelarbon 2

Rural

Number of fire trucks	2 Rural Brigades with Units (trucks) at Bungunya and Talwood
Number of Fire Brigade staff	All volunteers. Could be up to 60-70 volunteers in the Brigades in GRC. Other Brigades have 500L slip on units on private vehicles in various locations – could be as many as 4-6 units in some brigades
Number of support staff	None with Brigades
Future prospects	Bracken Creek near Inglewood is a higher risk area and may get a Brigade with a unit (as for Talwood, etc)
Highest risk areas	Inglewood Forestry (Tobacco Road Inglewood) has an incident centre with radios.

	See Wildfire operational Plan Local Area Plans prepared for high risk areas
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2.1.8.5 Queensland Ambulance Service (QAS)

The QAS has stations in Goondiwindi, Inglewood and Texas, with the latter two reporting to QAS Warwick. The staffing position and responsibilities are as follows:

Number of units	Goondiwindi 5, Inglewood 2, Texas 2 (always 2 at each station at any given time)
Number of Ambulance (paramedical) staff	Goondiwindi 11, Inglewood 2, Texas 2. Note: Inglewood and Texas report to Warwick Note 2: At Inglewood and Texas 1 on duty each day except Thursday when change over occurs (8 days on, 6 off)
Number of support staff	None – all report to Area Director. When extra help needed, QFRS auxiliaries used as well as SES.
Average number of call-outs	5 per day (Goondiwindi) – medical transports, medical emergencies (road accidents mainly), any necessary air transports to Toowoomba or Brisbane. Helicopter is located at Tamworth. Similar for Inglewood and Texas, but frequency about 300 per annum
Other issues of note	40% of work for Goondiwindi and Texas QAS is in NSW with Brisbane based coordination. Cross border issues are significant. Desirable to have medical helicopter based in Goondiwindi.
Evacuation procedures exercised and frequency	YES – FREQUENCY: Occasionally table top exercises, but routine training takes place

2.1.8.6 Hospital and Community Health Services

Statistics and issues for each of the 3 Queensland Health Hospitals are set out below:

Goondiwindi

Number of beds	45
Number of frail aged	5-12 (Qld Health classification of high care) – 11 during the floods
Associated nursing home?	NO – but works very closely with Kaloma Nursing Home for the Aged – good collaboration
Number of nursing staff	Morning shift max 20, of which 6 are community medical (physios, etc), but 50 part-time staff available

Number of support staff	Total staff is 70FTE, 6 Admin; total head count is 100
Evacuation procedures in place	YES
Nearest evacuation centre	Showgrounds in Goondiwindi, which were used in January Floods – was satisfactory since evacuation made in a timely fashion. Added advantage was that evacuees were able to take pets there
Fire safety procedures in place	YES
Evacuation procedures exercised and frequency	YES – FREQUENCY: exercised frequently in case of fire, evacuation could take place by helicopter
Other issues of note	The D.O.N took the decision to evacuate in January floods while still daylight and aged patients could be evacuated safely
Quarantine facility in event of pandemic/contagious disease	NO – no dedicated isolation wards, but quarantine achieved by procedures. Not really equipped
Level of surgical/other procedures possible	Minor surgical only (tonsils, obstetrics, etc). Major surgery to Toowoomba or Brisbane)
Any other points to make	GRC management of the emergency was seen as excellent. Crisis was managed well, but recovery less so, as authority lines unclear within Qld Health
Evacuation in January 2011 floods	11 by air and 12 by ambulance (Nursing Home by bus) Mattresses sent from hospital to Showgrounds. Might be difficult in very hot weather
Flood immunity of hospital	In the dry flood of January, water rose to top of levee bank and some seepage noticed. Hospital critically dependent on security of levee
Communications	Some difficulties with phones – Ambulance lines congested
General Comment	January 2011 floods were a real time exercise in effectiveness of evacuation procedures, which stood up very well, and lessons clearly learned

Inglewood

Number of beds	22 (10 Acute; 12 Aged Care)
Number of frail aged	12
Associated nursing home?	NO – Private Nursing Home adjacent to hospital – not a Qld Health facility
Number of nursing staff	2-3 per shift (27 part time available pool)
Number of support staff	2 part time

Evacuation procedures in place	YES
Nearest evacuation centre	Macintyre Centre plus/recreation centre. Agreed that Macintyre Centre is too small, not airconditioned, etc
Fire safety procedures in place	YES
Evacuation procedures exercised and frequency	YES – FREQUENCY: Rarely
Other issues of note	Hospital location is not at risk and is itself an evacuation centre for frail aged from Goondiwindi. Allied health services include dietetics, occupational therapy, radiography, physiotherapy, social work, speech therapy
Quarantine facility in event of pandemic/contagious disease	YES – Ward 12 is an isolation ward with 2 beds. It has an alternate entry to main hospital
Level of surgical/other procedures possible	Minor operations only – lesions removal and/or suturing only. Surgery patients to Toowoomba

Texas MPHS

Number of beds	22
Number of frail aged	12 aged care rooms and 10 acute care beds
Associated nursing home?	NO – all accommodated in Hospital
Number of nursing staff	18 Registered + 2 Community Health, 10 Nursing Assistants available
Number of support staff	3 Admin + 15 support staff (Cooks, Cleaners, etc..)
Evacuation procedures in place	YES
Nearest evacuation centre	None in Texas
Fire safety procedures in place	YES
Evacuation procedures exercised and frequency	YES, but infrequently
Other issues of note	Allied health services include dietetics, occupational therapy, radiography, physiotherapy, social work, speech therapy. There is also a private Medical Centre in Texas.
Quarantine facility in event of pandemic/contagious disease	YES. Has multiple single rooms with en-suites that could be isolated in the event of a pandemic and this has been exercised recently
Level of surgical/other procedures possible	Medical, surgical, paediatric nursing, accident & emergency, palliative care, postnatal care

2.1.8.7 Aged Care Services

Goondiwindi, Texas and Inglewood health services are Multipurpose Health Services which are funded jointly by Federal and State governments in recognition of provision of aged care in the hospitals – they all have dedicated aged care areas.

In addition, there is an aged care facility in Goondiwindi - Kaloma Home for the Aged (identified as a high risk area in the L&T Waggamba SC Flood Study), and one in Inglewood - a low care aged hostel “Casa Mia”, which is operated by the Church of Christ.

Statistics and Issues for the Kaloma Home of the Aged are set out below:

Kaloma Home for the Aged

Number of beds	83 patients/residents – 50 at Kaloma (8 independent living units), 25 in own homes
Number of frail aged	83 (all are frail aged)
Number of nursing staff	50 Care Staff, 30 Catering, Admin, Maintenance, etc
Number of support staff	See above
Evacuation procedures in place	YES – EMERGENCY PLAN PREPARED which identifies a range of evacuation centre possibilities. Currently having doorways widened so that beds can be rolled out (Kaloma is 24 years old)
Nearest evacuation centre	Cultural Centre identified, but this has since been eliminated. In January 2011 floods, Inglewood (Mc Intyre Centre took 25-30, Warwick took 6 and Oaks 12
Fire safety procedures in place	YES
Evacuation procedures exercised and frequency	YES FREQUENCY Regular – were well prepared for Jan floods, with trucks arranged to evacuate residents
Other issues of note	Communication with Kaloma was an issue when the event was developing. Relationship with LDMG requires further clarification. Landline phones were overloaded during early hours of January 2011 flood.
Quarantine facility in event of pandemic/contagious disease	NO
General Comments	4 patients/residents who were too sick to evacuate, and Hospital were initially reluctant to feed them. At least 3 days warning is necessary to prepare fully for evacuation of frail aged.

2.1.8.8 Schools

GRCA is serviced by the following State Primary schools (conducted by Education Queensland) offering education to grade 7 at:

- ▶ Goondiwindi (approx. 595 pupils)
- ▶ Inglewood (136)
- ▶ Texas (178)
- ▶ Bungunya (38)
- ▶ Kindon (16)
- ▶ Kioma (0)
- ▶ Lundavra (22)
- ▶ Talwood (39)
- ▶ Yelarbon (36)

There are also two Catholic Primary schools:

- ▶ St. Mary's School Goondiwindi (355)
- ▶ St Maria Goretti School Inglewood (41)

In addition, there is a State Secondary School at Goondiwindi (approx. 470 pupils).

It is likely that when the Evacuation Sub-Plan is developed, many of the schools will be identified as available refuge sites, in addition to the currently used Showgrounds (Goondiwindi) and McIntyre Centre (Inglewood).

2.1.8.9 Child Care Facilities

There are also private Child Care facilities outside of Council's responsibility located at:

- ▶ Goondiwindi – Goondiwindi & District Childcare Centre
- ▶ Goondiwindi – Coolabah Early Childhood Development Centre & Early Childhood Centre
- ▶ Inglewood – a joint kindergarten/child care facility
- ▶ Texas – a kindergarten and a private Child care facility – “Wrigglers & Gigglers”

2.1.8.10 Day Care and Respite

There are a number of respite and day care facilities provided for the aged in Goondiwindi, including a branch of Blue Nurses.

2.1.9 Hazardous sites

Fuel storage facilities in GRCA would not be considered large – some bulk fuel suppliers (Potters in Texas and Lowes in Goondiwindi) and larger service stations/truck stops (Caltex and BP in Goondiwindi) would be the largest in the GRCA.

One industry that might be described a “hazardous” is the Silver mine at Texas – the Twin Hills Silver Mine located 10kms east of the township.

Texas Silver Mines Pty Ltd, a subsidiary of Macmin Silver Ltd (Macmin) commenced exploration on the Texas Silver Project in 1994. Successful exploration by the company and its joint venture partner, Hunter Exploration N.L. (Hunter) of Perth in the period 1994-1998 delineated significant silver mineralisation. Macmin re-acquired Hunter's interest in 1998 and after further extensive drilling, completed the initial Twin Hills feasibility study at the end of 2000. The Twin Hills Mine produced approximately 500,000 ounces of silver between March 2007 and July 2009, when it was placed on full Care & Maintenance. The mine was subsequently acquired by Alcyone Resources and as recently as February 2011, the company was reportedly re-evaluating its prospects of reopening the mine.

Mining and metallurgical studies demonstrated that mining would be carried out by open-pit with ore crushed to minus 4mm, prior to being stacked on heaps. The heaps would be irrigated with a cyanide solution to leach silver into the solution (pregnant liquor solution – PLS). The PLS is then pumped through an electrowinning plant (EM-EW) to recover a high grade silver powder.

The potential hazard is the use of cyanide which would be transported by road from Gladstone on a regular basis when the mine is operating (the cyanide is in a solid inert form but if there was a rollover any contact with water could activate the cyanide and result in a chemical hazard). However, cyanide oxidises relatively rapidly in the environment and the likelihood of any damage resulting from spillage entering watercourses is both very low and, if it were to occur, short-lived.

2.2 Hazards

2.2.1 Risk Management Methodology

The methodology adopted to identify and assess the disaster risks was in accordance with ISO31000:2009 Risk management — Principles and guidelines.

The risk assessment tools adopted by the Study Advisory Group (SAG) during the development of the Plan are included in Attachment 1. The Disaster Risk Register developed in accordance with this methodology (Attachment 2) includes an assessment of identified disaster risks and current mitigation treatments.

The Treatment Action Plans for identified additional mitigation treatments are included in Attachment 3.

2.2.2 Critical disaster risks

Identified disaster risks which were assessed at the ‘Extreme’ level include the following:

Table 2.2 – Critical disaster risks

Risk ID	Risk Description	Residual Risk Level
1	Flooding of urban areas of Goondiwindi, Inglewood and Texas and smaller towns (General) , leading to: <ul style="list-style-type: none"> ▶ Significant disruption to infrastructure and services ▶ Injury ▶ Damage to Council Assets and/or private property 	Extreme E72
2	Goondiwindi Local Area Flooding, leading to: <ul style="list-style-type: none"> ▶ Significant disruption to infrastructure and services ▶ Injury ▶ Damage to Council Assets and/or private property 	Extreme E72
3	Inglewood Local Area Flooding, leading to: <ul style="list-style-type: none"> ▶ Significant disruption to infrastructure and services ▶ Injury ▶ Damage to Council Assets and/or private property 	Extreme E72
4	Texas Local Area Flooding, leading to: <ul style="list-style-type: none"> ▶ Significant disruption to infrastructure and services ▶ Injury ▶ Damage to Council Assets and/or private property 	Extreme E72
9	Flooding of low lying rural areas anywhere in the GRCA, leading to injury and/or damage to Council Assets or private property	Extreme E72

2.2.3 Mitigation of critical disaster risks

Treatment Action Plans for the mitigation of the above critical disaster risks have been developed (refer to Attachment 3).

Key actions to be undertaken include:

Table 2.3 – Key actions for mitigation of critical disaster risks

Risk ID	Planned treatment	Timeframe for completion
1,2,3,4,9	Arrangements to be made at State Government level to improve cross Qld/NSW border coordination and information distribution relating to: <ul style="list-style-type: none"> ▶ Dam release data ▶ Road conditions and road closures (essential for evacuation planning) ▶ Weather and river height warning information 	Prior to the next wet season
1,2,3,4,9	Arrangements to be made at State Government level to coordinate Qld/NSW	Prior to the next

Risk ID	Planned treatment	Timeframe for completion
	border Emergency Management at all times	wet season
4	The number and recording frequency of river height gauges and rainfall recording stations needs to be increased above Texas on and around the Dumaresq River and tributaries	Prior to the next wet season
1,2,3,4	Digital terrain mapping needs to be provided for the GRC towns (in particular) to enable the nature and extent of flooding to be better predicted from river height gauges, and thus ameliorative action taken (such as evacuations, sand bagging, etc.)	As soon as possible
1,2,3,4	Arrangements need to be made to ensure closer coordination/liaison between Queensland Health and private Aged Care providers in preparing for natural disasters, especially relating to evacuation procedures and the location and services available in evacuation centres	Prior to the next wet season
1,2,3,4,9	Emergency Management Queensland and other emergency service providers (QPS, QAS, QFRS) boundaries need to be aligned with GRC boundaries to avoid the necessity of dealing with multiple authorities during disasters	As soon as possible
1	A geotechnical study must be carried out to determine the status and security of levee banks protecting exposed areas of the GRCA	In progress
3	Further work needs to be done by GRC to determine the extent of flooding in the Inglewood township at various river heights of the McIntyre Brook (to be read in conjunction with the first planned treatment – above)	In progress

2.2.4 Next steps

The LDMG has taken action to ensure that all the key actions for the mitigation of disaster risks (above) are being addressed, or will be addressed in the coming months. The first 3 items in Table 2.3 are matters that require State and/or Federal Government action, and these have been the subject of recent discussions since the January 2011 floods. Similar support will be needed to ensure that the 4th item (provision of digital terrain mapping to enable better understanding of the nature and extent of flooding) and this is also the subject of negotiation with the State Government. The last 2 items of Table 3.1 require work that the Director, Engineering and Planning has in progress.

3. Prevention

3.1 Building codes and building-use regulations

Goondiwindi Regional Council assesses building applications against the Queensland Development Code and the Building Act 1975, the Building Regulation 2006 and the Building Code of Australia. Specifically, in respect of the critical disaster risk in the GRCA, Urban and Rural Flooding, floor heights necessary to provide flood immunity are applied according to NMP 1 – Floor Heights. This provides for the following criteria:

- ▶ Performance Criteria: P1 The occupants of all habitable rooms must be safeguarded against illness and injury caused by floodwater.
- ▶ Acceptable Solutions: A1 The floor level of a habitable room is:
 - Located at least 300mm above the ARI 100 flood level for the site; or
 - Where the ARI 100 is not known, 300mm above the highest recorded or expected (by the local government) flood level.

3.2 Legislation

Current building codes and all regulations for Council's area of responsibility are contained in the Planning Schemes of the three former Councils. It is anticipated that these schemes will be amalgamated within the next three years. All future building codes and approvals will take into consideration previous natural disaster and flood studies to prevent future development in flood prone areas.

3.3 Public education

Public education and public information are two separate functions within the context of the Plan.

3.3.1 Public Education

This consists of an ongoing public awareness program conducted by the SES, the media, Council and several statutory services through the Area Director EMQ Toowoomba.

Included in this program are the following:

- ▶ Publications explaining flooding and emergency procedures;

- ▶ Preparations of media releases explaining flooding preparedness and emergency procedures;
- ▶ Publications prepared by statutory services detailing the measures that should be taken to prevent, minimise and deal with the effects of emergency situations;
- ▶ Ongoing media campaign to encourage the public to "be aware";
- ▶ Ongoing public awareness campaign of need for individual prevention and preparedness actions and strategies such as emergency kits, stocking of non-perishable food and water supplies.

3.3.2 Public Information

Public information is that information, such as warnings and directions, which is passed on to the public prior to, during and after, a Disaster. The Chairperson has the responsibility for the dissemination to the public of Disaster Management information, as advised by the Controlling Authority, through the media and other communication networks available. When this plan is activated the Chairperson of the LDMG is the official source of public and media information. All outside media inquiries are to be directed to the Chairperson or their delegate once a media liaison has been appointed.

A Facebook page was used to good effect to inform residents during the January 2011 floods, and one of the most satisfying outcomes of this form of communication was the excellent response by young people who are particularly conversant with Face Book as a means of "keeping in touch".

3.4 Insurance incentives/disincentives

There is currently no insurance cover carried on Council infrastructure; however, it is understood that the Queensland and Commonwealth Governments are actively investigating the options for future insurance cover against a range of natural disasters.

3.5 Land-use management initiatives

As noted in 3.1 (above), development is discouraged in flood-prone areas as defined by the requirements of the Queensland Development Code.

4. Preparedness

4.1 Event coordination

The identified Disaster Coordination Centre (DCC) is located at:

4.1.1 Primary

Council Meeting Room
100 Marshall Street
Goondiwindi Qld 4390
Contact phone number: 07 4671 7400

The alternative location in the event of the main DCC being affected by a disaster event is:

4.1.2 Secondary

Council Board Room
82 Marshall Street
Goondiwindi Qld 4390
Contact phone number: 07 4671 7400

A Standard Operating Procedure has been developed for the activation of the Local Disaster Coordination Centre. The document reference is Disaster Management Plan Related Document 3 – Standard Operating Procedures Local Disaster Co-ordination Centre and it is available from Council's Intranet.

4.2 Warning systems and public education

4.2.1 Warning and alerting systems

4.2.1.1 Warnings

Warnings of natural disasters (e.g. floods, severe storms etc.) will be issued in the first instance to police through their current arrangements with BOM, Council, the SES Local Controller as well as media agencies. The Local Disaster Co-ordinator will ensure information is delivered to responsible agencies. In the event of a disaster for which the Bureau of Meteorology would not issue a warning, the designated Control Authority is to advise the Council and support organisations involved.

The LDMG, Council and individuals can view both rainfall and river data bulletins, which are updated hourly, on the Bureau of Meteorology's web page at

http://www.bom.gov.au/qld/flood/rain_river.shtml

4.2.1.2 Distribution

Upon implementation of this Plan, all public warnings will be distributed through the LDCC upon recommendation of the Control Authority and on the authorisation of the Chairperson of the LDMG or their delegate.

The LDMG will decide on the appropriate means of delivering warnings to residents, dependant on disaster type and local conditions, e.g. evacuation to safe housing, etc.. Full use will be made of print media, local radios, commercial radio and television outlets. The National Emergency Alert System may also be used upon approval of the SDCC.

4.2.1.3 Rural Residents

When any incident or disaster is likely to impact on rural residents, the LDCC must make reasonable effort to ensure contact is made with all rural residents to ensure their safety and welfare using communication networks available. For example, the Texas automated river gauging station is interrogated automatically and has no voice message capability. It is polled 12 hourly in normal conditions and 3 hourly during floods.

Council's internal databases are not always accurate in terms of the movement of people into and out of the area. Council will therefore encourage rural residents to take a pro-active approach and ensure that their neighbours are aware of any impending threats.

4.2.2 Public education

In accordance with the Disaster Management Act 2003 Section 30(1)(e) the LDMG must ensure that the community is aware of ways of mitigating the adverse effects of an event, and preparing for, responding to and recovering from a disaster.

As part of the general preparedness strategies of this plan, responsible agencies will conduct on going public awareness and education in relation to preparedness measures that can be taken to limit the effects of a disaster. Emergency Management Australia (EMA) and Emergency Management Queensland (EMQ) produce a number of information booklets and brochures as well as on line material that will be made available for residents.

As part of the ongoing review and assessment of plans, LDMG members will provide details as to education programs and initiatives that have been conducted during the assessment period or those that will be required or conducted in the future.

4.3 Response capability

4.3.1 Local Disaster Management Group Capability

The LDCC will only be activated upon the instruction of the Chairperson of the LDMG or the Local Disaster Co-ordinator in times of disaster or major incidents. The initial request for assistance will come from a Control / Lead Authority as designated in the Local Disaster Management Plan, the District Disaster Co-ordinator or a Queensland State Government Agency.

4.3.1.1 Basic Operations of LDCC

1. Local Disaster Co-ordinator to activate and staff LDCC to suitable level.
2. Commence Running Sheets to record all activities of the LDCC.
3. Relay all Official Warnings to Officer in Charge, affected area.
4. After initial contact, request continuing Situation Reports (Sitreps), dependent on the situation, and establish timeframes for same, i.e. hourly, or (3) hourly.
5. Establish early contact with EMQ Area Director and DDC Warwick.
6. Relay Situation Reports (Sitreps) to DDC Warwick and EMQ Area Director.
7. Record all inward telephone calls and requests for assistance and forward to Committee for necessary action.
8. All requests for assistance to be collated at LDCC and processed by LDMG.
9. If outside assistance required an official request from the Chairperson, or LDC, to DDC in Warwick is required.
10. A number of whiteboards will be set up for noting of operations, jobs, projected tasks and overview. Maintenance of these boards and running sheets will allow the Disaster Management Committee ready evaluation of the operation, and outstanding tasks. It will also allow for easy transfer of operational duties during shift changes.
11. Council Liaison Officers will collect all Local Orders and have the same collated at LDCC before requesting assistance and forwarding details to DDC Warwick and Area Director EMQ.
12. Ensure Council and all traders receive official memorandums from Executive Officer, SDMG, eg Freight arrangements, insurance subsidy arrangements, welfare, etc.
13. LDMG must ensure that the staff in the LDCC are kept fully informed on all decisions and actions taken by Local Group.

4.3.1.2 Specific Incident Responses

The LDMG will develop operating procedures for the identified risks over a period of time. These procedures will assist the LDCC in dealing with the operational aspects of the incident at hand. If the disaster or threat is one that does not have a specific procedure, other procedures will be used as a guide with suitable modifications to meet the particular situation.

4.3.1.3 Media Releases

All media releases from the LDCC are to be approved by the Chairperson or Local Disaster Co-ordinator of the LDMG prior to their release to the media. During major operations, the Chairperson or Local Disaster Co-ordinator will appoint a Media Liaison Officer to assist in this process.

4.3.1.4 Communications

During operations numerous calls are received from various sources requesting assistance or information, therefore there is a need to establish early in the operation, communications guidelines. These are as follows:

1. General telephone contact number for the LDMG and publication of these numbers.
2. The telephone number for the Chairperson should not be given out, except to DDC, Area Director EMQ, Executive Officer, SDMG and Ops Centre – Brisbane.

This will prevent overloading the Chairperson's contact number, allowing only direct contact from officials and will allow the Chairperson to make outgoing calls.

3. Where adequate telephones are installed, designate one telephone as a silent number.
4. Where mobile phones are used, arrangements need to be made to provide for alternative means of communication in the event of mobile network failure.

4.3.2 District Disaster Management Group capability

As set out in 4.3.1 (above), assistance may be requested from the DDMG in Warwick, and early contact will be made with EMQ Area Director and DDC Warwick.. Situation Reports (Sitreps) will be made to DDC Warwick and EMQ Area Director.

If outside assistance is required an official request from the Chairperson, or LDC, to DDC in Warwick is required.

4.3.3 Agency capability

Measurement of response capability by Goondiwindi Regional Council and the relevant agencies in the local government area was determined by operational activation in the case of the January 2011 flood, as well as the conduct of desk-top exercises. All agencies and support groups (such as the SES) are fully

aware of the chain of command and the responsibility for the activation of the LDCC in times of emergency, and this was fully tested in January 2011 and found to operate satisfactorily.

When sub plans are developed (for example, a public health sub plan which would deal with an outbreak of contagious disease or pandemic, and such a plan would clearly identify Queensland Health as the agency responsible for the activation of that plan.

The outcome of the measurement of response capability is documented in Attachment 4.

4.4 Resource list

Critical resources are discussed in Attachment 5.

5. Response

5.1 Activation

Response is defined as Measures taken in anticipation of, during, and immediately after an emergency to ensure its effects are minimised (Australian Emergency Management Glossary, 1998)

Under Queensland legislation, the Control authority for the majority of disaster situations is the Queensland Police Service. The Lead agency will depend on the type of disaster situation. For example, in the event of a pandemic or contagious disease outbreak (or risk thereof), Queensland Health is the lead agency. Individual agencies and organisations will have their own plans and procedures in place for response actions or specific standard operating procedures.

Under this plan, staff will continue to follow their parent organisation chain of command and procedures. The LDMG plays a coordinating role to achieve the best use of available resources by providing advice and guidance to the Chairperson on response strategies and actions. The Chairperson can then call on other agencies and resources that may not be available to the lead or response organisation.

In these situations, GRC will frequently provide a range of support services to the Lead Agency.

5.2 Accessing support

If additional resources are required during the response to a specific event, then the lead agency will call upon appropriate other agencies or EMQ for assistance. Private or volunteer organisations (such as the SES) will frequently be so called upon, but the assistance of private companies and individuals may also be accessed (see below for one such example).

The Twin Hills Silver Mine is owned by Alcyone Resources. The company has indicated to Council that they would be prepared to allocate resources (probably heavy earth-moving plant and machinery) in the event of a natural disaster, and this could be very useful in the recovery phase following the event.

The LDMG is considering seeking similar assistance from local earth-moving or related contractors, who could potentially contribute personnel and machinery in flood clean-up operations. Discussions could also be held with neighbouring Councils in Queensland and NSW with a view to sharing such resources as applicable.

5.3 Functional plans

Functional Plans are being prepared to detail arrangements for functional support in the following areas:

- ▶ Welfare and Evacuation Plan (in preparation)
- ▶ Communications plan (to be considered)
- ▶ Health plan (to be considered)
- ▶ Transport plan (to be considered)

The Welfare and Evacuation Plan is now well developed and should be finalised and released in the near future.

The processes and arrangements detailed in these plans can be implemented for a range of events.

5.4 Threat specific arrangements

While the response to threat specific events is managed by other agencies, Goondiwindi Regional Council may be required to provide support to these arrangements. Threat specific events for the local government area include:

- ▶ Counter terrorism
- ▶ Exotic animal/plant disease
- ▶ Major traffic accident
- ▶ Epidemic or other health issues

These Plans are not yet prepared but are expected to be released in the next few months.

5.5 Emergency action plans

Emergency Action Plans have been prepared to detail arrangements for responding to failures of hazardous facilities and infrastructure:

- ▶ Coolmunda Dam (Lake Coolmunda)
- ▶ Glenlyon Dam (operated by Sunwater for the Border Rivers Commission)
- ▶ Pindari Dam (operated by the State Water Corporation of NSW [State Water])
- ▶ Twin Hills Silver Mine

These Plans are available from the nominated agency or company (above).

5.6 Initial impact assessment

The LDMG is responsible for initial impact assessment of natural disasters requiring multi-agency response. As set out in 4.3.1 and 4.3.1.1, the initial responsibility will fall to the lead agency or authority as appropriate – QPS for evacuations, Queensland Health for outbreaks of contagious diseases or pandemics, etc.

5.7 Contact details

Relevant contact details are addressed in Attachment 6.

5.8 Risk Maps

Lists of available risk maps are included in Attachment 7.

This also includes information as to the availability of risk mapping including the responsible organisation and individual officer where appropriate.

5.9 Disaster management training register

A register for disaster management training carried out with Council and agency personnel is included in Attachment 8.

6. Recovery

6.1 Queensland Disaster Relief and Recovery Arrangements

The Queensland Government operates two programs of assistance. Firstly, the Natural Disaster Relief and Recovery Arrangements (NDRRA), a joint Commonwealth/State program that is able to provide grant and loan assistance to disaster affected community members, small businesses, primary producers and Local and State Governments for the impact of defined natural disasters. Secondly, the State Disaster Relief Arrangements (SDRA), a wholly State funded program, that is able to be activated for all hazards, and provides assistance where personal hardship and distress follows the impact of a disaster event.. Details of these programs are set out in the *Queensland Disaster Relief and Recovery Arrangements Guidelines 2009-2010*.

6.1.1 Infrastructure

The LDMG triggers the applications for recovery assistance under these guidelines, and specifically, in respect of Council assets and infrastructure, assistance to the Community in the restoration of essential public assets follows the guiding principles below:

This relief measure financially assists eligible *State* and Local Governments in the restoration of essential public assets, following an eligible disaster event, to pre-disaster standard/level of service, in accordance with current engineering standards/requirements and building codes/guidelines, while maintaining the same asset class and/or immunity level. This relief measure is only available under NDRRA.

Funds are provided to restore essential public assets, damaged by an eligible disaster event, to its pre-disaster standard. This includes restoration in accordance with current engineering standards/requirements and building codes/guidelines.

6.1.2 Community

Relief measures exist and are designed to assist homeowners who need to rebuild or replace their residences following a natural disaster. Assistance would not generally be available where adequate insurance could be accessed at reasonable rates. This relief measure is only available under NDRRA.

The identification of personal hardship and distress amongst the community, as a direct impact of an eligible disaster event, is the responsibility of the Department of Communities (DOCs). Lifeline and mental health issues are also addressed through DOCs.

6.1.3 Economic

GRC advises the Chambers of Commerce, Border Rivers Food and Fibre, the Irrigator Groups, etc on the availability of assistance to small business through the NDRRA, of relief measures designed to assist in meeting the needs of *Small Business* to recover from natural disaster events of a substantial magnitude. Similar assistance is also available to assist in meeting the needs of *Primary Producers*

6.1.4 Environment

GRC and the LDMG liaise with DERM, Land Care Groups and the Murray Darling Basin Authority in seeking State Government assistance in the restoration of the natural environment damaged by severe natural disasters, such as floods, severe storms and bushfires.

6.2 Recovery Functional Plan (sub plan)

More specific recovery arrangements will be detailed in the Recovery Functional Plan when prepared in the future.

Attachment 1: Risk Assessment Tools

Measures of Effectiveness

Note: The following table was used to assess the effectiveness of existing risk treatments. This information was then taken into account when determining the Consequence, Likelihood and therefore the level of Residual Risk for each identified Disaster Risk.

No.	Level	Communication and documentation	General effectiveness
5	Excellent	Risk treatments and procedures are implemented, with communication and monitoring on a regular basis to determine their level of effectiveness in 'managing' the risk.	Is effective in reducing the risk under all conditions.
4	Good	Risk treatments and procedures are well documented and implemented, but with some room for improvement. Good communication and understanding of treatments with some degree of monitoring.	Is effective in reducing the risk under most conditions.
3	Fair	Risk treatments and procedures documented, but not well implemented, with minimal monitoring to ensure compliance or to determine their level of relevance.	Is effective in reducing the risk under ideal conditions.
2	Marginal	Risk treatments and procedures are informal, not well communicated and are implemented in an inconsistent manner.	Is partially effective in reducing the risk.
1	Poor or non-existent	Risk treatments and procedures are non-existent or ineffective; not communicated, sparsely implemented and of little value.	Makes little impact in reducing the risk.

Measures of Consequence (or Impact)

Note: The Examples in the table below were amended during Plan development to suit each Council’s risk profile, experience and circumstances.

Level	Examples						
	Financial (Revenue & Costs)	Information & Data	Property	People	Provision of Service	Reputation	Environment
1. Insignificant	<ul style="list-style-type: none"> Low financial loss (e.g. < 1% of revenue or budget) 	<ul style="list-style-type: none"> Negligible loss of or damage to IT and communications. No loss of data. 	<ul style="list-style-type: none"> Negligible damage to or loss of assets. 	<ul style="list-style-type: none"> No significant injuries. No significant impact on personnel. 	<ul style="list-style-type: none"> Short-term, localised interruption to service / performance. 	<ul style="list-style-type: none"> Issue of no public concern. Isolated communications expressing concern. 	<ul style="list-style-type: none"> Minor breach of environmental policy / practices. Negligible impact on the environment.
2. Minor	<ul style="list-style-type: none"> Minor financial loss (e.g. 1% to 2% of revenue or budget) 	<ul style="list-style-type: none"> Minor loss / damage to IT and communication. Some data catch-up may be required. 	<ul style="list-style-type: none"> Minor loss / damage. Some repairs may be required. 	<ul style="list-style-type: none"> Small number of injuries; first aid or out-patients treatment required. Some inconvenience to personnel. 	<ul style="list-style-type: none"> Minor, temporary disruption to services; Minor inconvenience to client(s). 	<ul style="list-style-type: none"> Local public concern. May cause some complaints (justified or unjustified). 	<ul style="list-style-type: none"> Minor localised impact; one-off situation easily remedied.
3. Moderate	<ul style="list-style-type: none"> High financial loss (e.g. 2% to 5% of revenue or budget) 	<ul style="list-style-type: none"> Moderate to high loss of IT. Some data may be permanently lost. Workarounds may be required. 	<ul style="list-style-type: none"> Moderate to high damage requiring specialist/contractor equipment to repair or replace. 	<ul style="list-style-type: none"> A number of injuries requiring hospitalisation and long-term treatment. Moderate disruption to work routines and schedules. 	<ul style="list-style-type: none"> Some serious disruption to services; some contravention of legal/contractual obligations. 	<ul style="list-style-type: none"> Regional public concern. Significant complaints. Some adverse publicity. Local media coverage 	<ul style="list-style-type: none"> Moderate impact on the environment; no long term or irreversible damage. May incur cautionary notice or infringement notice

Measures of Consequence cont.

Level	Examples						
	Financial (Revenue & Costs)	Information & Data	Property	People	Provision of Service	Reputation	Environment
4. Major	<ul style="list-style-type: none"> Major financial loss (e.g. 5% to 10% of revenue or budget) 	<ul style="list-style-type: none"> High risk of loss/ corruption of data; significant catch-up will be required. Business continuity plans need to be implemented. 	<ul style="list-style-type: none"> Significant / permanent damage to assets and / or infrastructure. 	<ul style="list-style-type: none"> Major disruption to work routines and practices. Additional resources may be required. Significant number of serious injuries requiring hospitalisation and long-term treatment. Small number of fatalities. 	<ul style="list-style-type: none"> Major, long-term disruption to services. Serious breach of a legal / contractual obligation. 	<ul style="list-style-type: none"> Significant public concern. Adverse publicity in national media. Embarrassment to the organisation. Damage to credibility and confidence in the organisation. Inquiry by regulators. State or regional media coverage. 	<ul style="list-style-type: none"> Severe impact requiring remedial action and review of processes to prevent reoccurrence. Penalties and / or direction or compliance order incurred.
5. Catastrophic	<ul style="list-style-type: none"> Huge financial loss (e.g. >10% of revenue or budget) 	<ul style="list-style-type: none"> Extensive loss of / damage to IT and communications assets and infrastructure. Permanent loss of data. Widespread disruption to the business. 	<ul style="list-style-type: none"> Widespread, substantial / permanent damage to assets and/or infrastructure. 	<ul style="list-style-type: none"> Long-term disruption to work practices and routines. Impact on well-being of personnel. Extensive, life-threatening impact; potentially large numbers of serious injuries and fatalities. 	<ul style="list-style-type: none"> Long term/irreversible impact on ability to deliver client services. Viability of the organisation in its current form is questionable. 	<ul style="list-style-type: none"> Major public concern. Widespread, ongoing national and possibly international media attention. Severe embarrassment to the organisation. Loss of credibility and confidence in the organisation. Adverse findings and/or penalties by regulator. 	<ul style="list-style-type: none"> Long-term, large-scale damage to habitat or environment. Serious / repeated breach of legislation / licence conditions. Cancellation of licence and / or prosecution.

Measures of Likelihood

Note: The Examples in the table below were amended during Plan development to suit each Council’s risk profile, experience and circumstances.

No.	Level	Description	Examples
5	Almost certain	The event will occur in most conditions	Expected frequency range: Greater than one or more per annum
4	Likely	The event will probably occur in most conditions	Expected frequency range: Between one in 5 years and one per annum
3	Possible	The event should happen at some time	Expected frequency range: Between one in 10 years and one in 5 years
2	Unlikely	The event could happen at some time	Expected frequency range: Between one in a 100 years and one in 10 years
1	Rare	The event may only occur in exceptional circumstances	Expected frequency range: Less than one in a hundred years

Risk Assessment Matrix

Likelihood		Consequence									
		Insignificant		Minor		Moderate		Major		Catastrophic	
		1	2	3	4	5					
Almost certain	5	M	52	H	64	E	76	E	88	E	100
Likely	4	M	44	H	56	H	68	E	80	E	92
Possible	3	L	36	M	48	H	60	E	72	E	84
Unlikely	2	L	28	L	40	M	52	H	64	E	76
Rare	1	L	20	L	32	M	44	H	56	H	68

Legend

E	Extreme risk; immediate action required
H	High risk; senior management attention needed
M	Moderate risk; management responsibility must be specified
L	Low risk; manage by routine procedures

Attachment 2: Disaster Risk Register

No.	Statement of Disaster Risk and immediate Consequences	Causation / Source of Risk	Existing Risk Treatments	Effective-ness	Conseq. Level	Likeli-hood	Residual Risk Rating	Risk Custodian
Vulnerable Sector: Urban Areas								
1	<p>Flooding of urban areas of Goondiwindi, Inglewood and Texas and smaller towns (General), leading to:</p> <ul style="list-style-type: none"> • Significant disruption to infrastructure and services • Injury • Damage to Council Assets and/or private property 	<ul style="list-style-type: none"> • Breaching/overtopping of levee banks • Surcharging of urban drainage systems (localised flooding) due to severe storms • Surcharging of urban drainage systems due to East Coast Lows (level 3 and below cyclones) 	<ul style="list-style-type: none"> • Levee banks on Macintyre River, Dumaresq River and minor creeks subject to flooding • Urban drainage designed in accordance with AR&RO procedures and standards • Bureau of Meteorology warning system • Evacuation procedures for vulnerable groups (aged care, hospitals, vulnerable individuals) • Facebook advice to residents on evacuation procedures, LDMG advice, SES activity, etc. 	Good	4. Major	3. Possible	Extreme E72	LDMG
2	<p>Goondiwindi Local Area Flooding, leading to:</p> <ul style="list-style-type: none"> • Significant disruption to infrastructure and services • Injury • Damage to Council Assets and/or private property 	<ul style="list-style-type: none"> • Breaching/overtopping of levee banks • Surcharging of urban drainage systems (localised flooding) due to severe storms • Surcharging of urban drainage systems due to East Coast Lows 	<ul style="list-style-type: none"> • Levee banks, flood gates, flaps and valves • Flood Response Procedure (Std Procedures Register) – responsible staff nominated • Flood Response Checklists (3.8m and 8.5m) – Close Flood gates, 	Excellent	4. Major	3. Possible	Extreme E72	LDMG

No.	Statement of Disaster Risk and immediate Consequences	Causation / Source of Risk	Existing Risk Treatments	Effective-ness	Conseq. Level	Likeli-hood	Residual Risk Rating	Risk Custodian
		(level 3 and below cyclones)	Flaps and/or Valves at these levels • LDMG Evacuation Plans • Bureau of Meteorology warning system					
3	Inglewood Local Area Flooding, leading to: • Significant disruption to infrastructure and services • Injury • Damage to Council Assets and/or private property	• Breaching/overtopping of levee banks • Surcharging of urban drainage systems (localised flooding) due to severe storms • Surcharging of urban drainage systems due to East Coast Lows (level 3 and below cyclones) • SUNWATER summer operational policy for Coolmunda Dam of 100% Irrigation & 75% flood mitigation	• Levee banks, flood gates, flaps and valves • Flood Response Inglewood Area Fact Sheet (work in progress) • SunWater Operational Policy for Coolmunda Dam • LDMG Evacuation Plans • Bureau of Meteorology warning system	Fair	4. Major	3. Possible	Extreme E72	LDMG
4	Texas Local Area Flooding, leading to: • Significant disruption to infrastructure and services • Injury • Damage to Council Assets and/or private property	• Breaching/overtopping of levee banks • Surcharging of urban drainage systems (localised flooding) due to severe storms • Surcharging of urban drainage systems due to East Coast Lows (level 3 and below cyclones)	• Levee banks, flood gates, flaps and valves • LDMG Evacuation Plans • Bureau of Meteorology warning system	Fair	4. Major	3. Possible	Extreme E72	LDMG

No.	Statement of Disaster Risk and immediate Consequences	Causation / Source of Risk	Existing Risk Treatments	Effective-ness	Conseq. Level	Likeli-hood	Residual Risk Rating	Risk Custodian
5	<p>Severe storms, leading to:</p> <ul style="list-style-type: none"> • Significant disruption to infrastructure and services • Damage to Council Assets and/or private property • Injury resulting from flying debris, falling trees, powerlines, etc 	<ul style="list-style-type: none"> • Summer thunderstorm activity (wind, hail, heavy rainfall), leading to: • Damage to infrastructure (roads, powerlines, telecommunications) • Damage to public and private buildings, including loss of roofs 	<ul style="list-style-type: none"> • Building codes • Bureau of Meteorology warning strategy • SES response • Emergency Alert • Public education 	Good	3. Moderate	3. Possible	High H60	GRC
6	<p>Fire – major residential or commercial (more than one building or involving hazardous materials), leading to property and/or personal damage and injury or death</p>	<ul style="list-style-type: none"> • Electrical fault • Arson • Lighting strike • Other? 	<ul style="list-style-type: none"> • QFRS regulations • Public Education 	Good	2. Minor	2. Unlikely	Low L40	QFRS
7	<p>Earthquake, leading to:</p> <ul style="list-style-type: none"> • Building collapse • Death of injury to occupants • Collapse of bridges and other infrastructure, water supply and sewage systems • Roadway deformation, leading to traffic accidents • Dam break • Landslip 	<ul style="list-style-type: none"> • Seismic activity that is difficult to predict: Note: AGSO states that highest hazard region is along east coast of Qld. Earthquakes with potential to cause serious damage (ML >5) have occurred on average about every 5 years in last 100 years • Little or no warning likely 	<ul style="list-style-type: none"> • GRCA is not considered seismically active • Building Codes – refer to AS1170.4 for applicable codes and standards • The 2 large dams are earth or rock fill, where risk of dam break is minimised 	Good	4. Major	1. Rare	High H60	GRC

No.	Statement of Disaster Risk and immediate Consequences	Causation / Source of Risk	Existing Risk Treatments	Effective-ness	Conseq. Level	Likeli-hood	Residual Risk Rating	Risk Custodian
8	Pandemic, resulting in death or disease to large numbers of people (eg Swine Flu)	<ul style="list-style-type: none"> • Disease transmitted by visitors • Disease transmitted via water supply • Lack of emergency staff to respond (as they will also be impacted) • Reduced access due to quarantine restrictions 	<ul style="list-style-type: none"> • Capacity of GRCA Hospitals to quarantine affected patients (see 2.1.8.7) • Capacity of GRCA Hospitals to treat or evacuate affected patients • Public vaccination programs <p>Preventative measures include:</p> <ul style="list-style-type: none"> • developing resources that would assist in a disaster eg. fact sheets, promotional resources, forms for documenting public enquires etc • identifying at risk populations and their key meeting places for dissemination of information • determining the most effective means of communicating and disseminating information, and the preparation and dissemination of information • preparing and coordinating media releases in conjunction with the Queensland Health Communications Officer • providing support in answering public enquires on preventative 	Fair	4.Major	2. Unlikely	High H64	Qld Health

No.	Statement of Disaster Risk and immediate Consequences	Causation / Source of Risk	Existing Risk Treatments	Effective-ness	Conseq. Level	Likeli-hood	Residual Risk Rating	Risk Custodian
			measures.					
Vulnerable Sector: Rural Areas								
9	Flooding of low lying rural areas anywhere in the GRCA, leading to injury and/or damage to Council Assets or private property	<ul style="list-style-type: none"> Breaching/overtopping of levee banks Overtopping or extremely high release from Glenlyon Dam or Lake Coolmunda Overtopping of larger farm dams Flooding of rural roads due to severe storms 	<ul style="list-style-type: none"> Levee banks on Macintyre River (and elsewhere?) Management and operational procedures for Glenlyon Dam and Lake Coolmunda Bureau of Meteorology warning system Evacuation procedures for vulnerable groups (aged care, hospitals, vulnerable individuals) Council warnings re affected roads 	Good	4. Major	3. Possible	Extreme E72	LDMG Sunwater (for Lake Coolmunda)
10	Rural fires (bush and grass), leading to injury or death and damage to State and Council Assets and/or private property	<ul style="list-style-type: none"> Prolonged drought, high temperatures in summer, high winds Lighting strike Arson 	<ul style="list-style-type: none"> QFRS regulations (controlled burns, fire breaks) to limit availability of flammable material Management of State Forest and public lands GRCA not classified by QFRS as high risk area (no bushfire hazard maps) QFRS SIOPP Regional Functional Plan 2010-2011 	Good	2. Minor	4. Likely	High H56	QFRS

No.	Statement of Disaster Risk and immediate Consequences	Causation / Source of Risk	Existing Risk Treatments	Effective-ness	Conseq. Level	Likeli-hood	Residual Risk Rating	Risk Custodian
11	Animal and plant disease (eg Avian Flu), leading to crop and stock losses	<ul style="list-style-type: none"> • Importation of infected plants and/or animals • Lack of access due to quarantine restrictions 	<ul style="list-style-type: none"> • Safety Management procedures exist for Communicable Plant Diseases and Infestations • Comprehensive Safety Management procedures exist for Insect Infestations 	Good	3. Moderate	3. Possible	High H60	DEEDI Bio security Qld
12	Hazardous materials accident, leading to: <ul style="list-style-type: none"> • Disruption to traffic • Possible injury to people exposed to spill 	<ul style="list-style-type: none"> • Spillage of hazardous materials used in mining and agriculture • Transport 	<ul style="list-style-type: none"> • Use of ISO Tankers to transport hazardous materials • Relatively benign nature of cyanide in the environment (rapid oxidation in air or water) • Notification procedures • QFRS response procedures 	Good	2. Minor	3. Possible	Moderate M52	QFRS
13	Earthquake, leading to: <ul style="list-style-type: none"> • Building collapse • Death of injury to occupants • Collapse of bridges and other infrastructure, water supply and sewage systems • Roadway deformation, leading to traffic accidents • Dam break • Landslip 	<ul style="list-style-type: none"> • Seismic activity that is difficult to predict: Note: AGSO states that highest hazard region is along east coast of Qld. Earthquakes with potential to cause serious damage (ML >5) have occurred on average about every 5 years in last 100 years • Little or no warning likely 	<ul style="list-style-type: none"> • GRCA is not considered seismically active • Building Codes – refer to AS1170.4 for applicable codes and standards • The 2 large dams are earth or rock fill, where risk of dam break is minimised 	Good	4. Major	1. Rare	High H60	GRC
14	Major Road Traffic Accident, resulting in: <ul style="list-style-type: none"> • Loss of life or serious injuries 	Accident resulting from: <ul style="list-style-type: none"> • Adverse weather conditions 	<ul style="list-style-type: none"> • QPS traffic enforcement from each of the 5 stations in the GRCA • Advertising need for careful 	Good	3. Moderate	3. Possible	High H60	QPS

No.	Statement of Disaster Risk and immediate Consequences	Causation / Source of Risk	Existing Risk Treatments	Effective-ness	Conseq. Level	Likeli-hood	Residual Risk Rating	Risk Custodian
	<ul style="list-style-type: none"> Road closures 	<ul style="list-style-type: none"> Excessive speed above design speed Alcohol influenced driver behaviour Adverse road conditions following flood damage Fatigue 	<ul style="list-style-type: none"> driving and rest breaks Public education Road maintenance performance contracts (RMPC) to ensure resources applied to high risk areas QAS/QFRS response procedures 					
15	<p>Collapse or failure of a large farm dam (referrable dam)</p> <p>Leading to:</p> <ul style="list-style-type: none"> Injury risk to 2 or more people Damage to private property and/or Council assets 	<ul style="list-style-type: none"> As shown by revised rainfall data, floods are much larger than anticipated when many dams were designed Spillway capacity may thus be inadequate Increased construction of gully and/or ring dams in recent years 	<ul style="list-style-type: none"> DERM identification and assessment of referrable dams in the GRCA Failure impact assessments (if required by DERM, whether or not dam is classed as referrable) in accordance with DERM's Guidelines for failure impact assessment of water dams – April 2002 Safety conditions and permits for existing referrable dams DERM requirements for emergency action to prevent or minimise the impact of dam failure 	Good	3. Moderate	2. Unlikely	Moderate M52	Individual land owners (in consultation with DERM)

Attachment 3: Treatment Action Plans (example only)

Risk No.	1	Risk:	Flooding of urban areas of Goondiwindi, Inglewood and Texas and smaller towns (General)	Risk Custodian:	LDMG
Level:	Consequence 4 Major		Likelihood 3 Possible	Residual Risk Level Extreme E72	
Causation:	Breaching/overtopping of levee banks Surcharging of urban drainage systems (localised flooding) due to severe storms Surcharging of urban drainage systems due to East Coast Lows (level 3 and below cyclones)				
TREATMENT:					
Existing Controls:					
<ul style="list-style-type: none"> Levee banks on Macintyre River, Dumaresq River and minor creeks subject to flooding Urban drainage designed in accordance with AR&RO procedures and standards Bureau of Meteorology warning system Evacuation procedures for vulnerable groups (aged care, hospitals, vulnerable individuals) Facebook advice to residents on evacuation procedures, LDMG advice, SES activity, etc. 					
New Treatments: WHAT do you intend to do (i.e. general strategy)? (Example of one only)					
Treatment	Expected benefits		Expected constraints		Expected costs
The number and recording frequency of river height gauges and rainfall recording stations needs to be increased above Texas on and around the Dumaresq River and tributaries	<ul style="list-style-type: none"> Improved flood forecasting and earlier advice given to affected residents Opportunity to evacuate, move stock & equipment to higher ground, etc 		<ul style="list-style-type: none"> High cost of installation and telemetry of new stations Limitations on number and location of river height and rainfall recording stations 		<ul style="list-style-type: none"> TBA
New Treatments: HOW do you intend to do it (i.e. specific actions)?					
<ul style="list-style-type: none"> Liaise with State Government to determine the number, locations, costs and timing of new installations 					
RESOURCES required for implementation?					
<ul style="list-style-type: none"> LDGM nominated officers to coordinate requests and to liaise with adjacent Councils in Qld and NSW 					
WHERE will it be incorporated (e.g. business plan, operational plan, budget etc)?					
<ul style="list-style-type: none"> LDMG operational procedures 					
WHO is the Risk Custodian (accountable officer)?			WHO will implement the treatments?		
<ul style="list-style-type: none"> Director of Engineering & Planning through LDMG 			<ul style="list-style-type: none"> DERM 		
WHEN will the treatments be developed?			WHEN will you review the treatments for effectiveness?		
<ul style="list-style-type: none"> By the start of the 2011/2012 wet season 			<ul style="list-style-type: none"> LDMG and DDMG 		
HOW will you know when it's done (i.e. what are the measurable indications that the planned treatments have been implemented)?					
Performance Indicators:	<ul style="list-style-type: none"> Improved response times during flood emergencies Resident satisfaction with the improvements to warning times 				
CLOSE OUT:	The above treatment plan has been fully implemented				
	(signed) Risk Custodian		Date		

Attachment 4: Response Capability

Date	Type	Process	Participants	Lessons learnt	Prioritised opportunities for improvement	Actions	Responsible officer	Due date
			▶	▶	▶	▶		
			▶	▶	▶	▶		
			▶	▶	▶	▶		

NOTE: January 2011 response still being evaluated by LDMG and lessons learned will be incorporated in DMP

Attachment 5: Resource List

NOTE: EXAMPLE ONLY

Responsible agency	Resources needed	Purpose	Location and number of units required
Essential Energy (Origin)	Diesel & petrol generators	Emergency power supplies at evacuation centres and in vulnerable private homes and businesses	Various - TBA
LDMG, QAS, Qld Health, Private Aged Care providers	Buses, ambulances and other vehicles	Evacuation of vulnerable persons from Hospitals, Aged Care Homes and elsewhere in the community	QAS resources in GRCA and elsewhere in SE Qld, and various other sources
LDMG, QPS, Qld Health, Private Aged Care providers	Emergency food supplies	Supplies for evacuation centres	TBA

Attachment 6: Local Disaster Management Contact Details

Standard procedure is that the LDMG Executive Members Contact List is categorised as a restricted viewing document (i.e. it is not available to the general public) due to the sensitivity of emergency contact information of the LDMG executive members.

Contact with the LDMG or individual members of the LDMG in the event of a disaster can be made as shown in section 4.1.

Attachment 7: Risk Maps

Hazard map(s)	Area covered	Availability	Contact
Goondiwindi Town Levee Failure Scenarios – Report prepared for Goondiwindi Town Council March 2002 – <i>Lawson and Treloar</i>	Goondiwindi Town and surrounds	Goondiwindi Regional Council	Director, Engineering and Planning
Goondiwindi Flooding Investigation – Report prepared for Waggamba Shire Council March 2007 – <i>Cardno Lawson Treloar</i>	Goondiwindi Environs	Goondiwindi Regional Council	Director, Engineering and Planning

Attachment 8: Disaster Management Training Register

Note: to be prepared over time by LDMG

Date	Training	Trainer	Participants (name and organisation)
			▶
			▶
			▶

Attachment 9: Stakeholder Consultation Summary

Date	Stakeholder	Organisation/Agency	Cross Reference in NDRM Plan
15 March 2011	Ann McGlashen	SES Coordinator Inglewood/Texas	2.1.8.2, page 24
15 March 2011	Melissa McDowell	A/DON Inglewood Hospital	2.1.8.6, page 27-28
16 March 2011	Katie Jefford	DON Goondiwindi Hospital	2.1.8.6, page 26-27
16 March 2011	Michael Patch	Area Director QFRS	2.1.8.4, page 25
18 March 2011	Blair Fogarty	Stn Officer in Charge QAS Goondiwindi	2.1.8.5, page 26
16 March 2011	Richard McIntosh	Snr Sgt QPS Goondiwindi	2.1.8.3, page 24
17 March 2011	Jim Burdett	Area Mgr Essential Energy	2.1.7.4, page 21-22
17 March 2011	Graeme De Britt	SES Coordinator Goondiwindi/Yelarbon	2.1.8.2, page 24
17 March 2011	Tim Hoffman	Sgt in Charge QPS Inglewood	2.1.8.3, page 24
17 March 2011	Greg Moore	Sgt in Charge QPS Texas	2.1.8.3, page 25
12 April 2011	Iain Bowen	Stn Officer in Charge QAS Texas	2.1.8.5, page 26
17 March 2011	Wally Rye	Area Director SW Region QFRS (meeting in Texas)	2.1.8.4, page 25
18 March 2011	Dave Burges	Director Engineering & Planning GRC	Various throughout
18 March 2011	Damon Meadows / Joanne Murrell	Snr Advisors Dept Infrastructure & Planning (meeting in Toowoomba)	6, page 44
12 April 2011	Cr Rick McDougall	Vice Chair Irrigators Group (meeting in Inglewood)	2.1.1, page 15
12 April 2011	Ron Teese	Chair Irrigators Group Texas	2.1.1, page 15
13 April 2011	Penni Roberts	CEO Kaloma Home for the Aged Goondiwindi	2.1.8.7, page 29
Phone interview(s)	Marya Hayward	DON Texas MPHS	2.1.8.6, page 28

Attachment 10: Summary of Public Submissions

Date	Name	Summary of Key Issues Raised
24 February 2011	Tom Donald Inglewood	<p>There are 5 permanent residents in this small area at present. They can experience intermittent isolation by rainfall in the Millmerran Road area, by release of water from Coolmunda Dam and by rainfall in the Catfish catchment area.</p> <p>The major problem is that the Bosnjaks Road and Lanes Lane crossings can go under from water released in large volumes from the dam. At times residents are notified and other times not. Sunwater are not obligated to advise non irrigators of water releases, and it is only recently they have included others on their list.</p> <p>Lanes Lane crossing is lower than Bosnjaks crossing, if the crossing was a metre higher at Bosnjaks we would not suffer so often from isolation, there is nothing short of a bridge that would accommodate the January 2011 inflow.</p> <p>Is most annoyed by the intermittent isolation by way of dam water release, which prevents children from attending school, others from attending to their business, sports club members from attending their sport and those suffering from medical conditions attending doctors etc.</p> <p>There have been a few times last year where competitors at the SSAA range were nearly stranded due to release of water from the dam without prior notification, and this has caused considerable inconvenience.</p> <p>If there were to be a conjunction of bushfire and water release at the same time the results could be fatal.</p> <p>Would appreciate GRC looking at the possibility of raising Bosnjaks crossing by 200 to 300 mm in the near future.</p>
24 February 2011	Mike Henderson Goondiwindi	<p>Has noticed a number of sites where the river bank batters and top bank have suffered varying degrees of slumping. This has in some cases occurred very close to the toe of the town levee.</p> <p>Believes these types of subsidence can lead to partial or total collapse of the bank which is constructed nearby.</p> <p>Generally these types of areas (preliminary slumping) retain a high level of moisture and loose material as the vegetation collapses. If the area is relatively wet it is highly susceptible to further erosion if another high flow occurs.</p> <p>As a result a river level which reaches the height of the subsiding sites, not necessarily a major flood, can easily wash the material away. This in turn could result in a total collapse of the bank and levee in the vicinity.</p> <p>Has noticed some homes on the river with drainage pipes of some type protruding through the river bank. Some slumping had occurred and a high level of moisture and</p>

Date	Name	Summary of Key Issues Raised
		<p>silty material were evident. These pipes may have been stormwater discharge. pool overflows etc. and was concerned these structures could adversely impact on the integrity of the natural river bank and the town levee. The proliferation of gazebos, tree planting and other substantial structures may have added to this concern. Deep footings and posts as well as DIY construction could also be evident.</p>
1 March 2011	Joan White Inglewood	<p>Need to assess the appropriateness of any nominated evacuation centres MacIntyre Sports Complex was used as the evacuation centre during Jan 2011 floods. The limitations with this facility were:</p> <ul style="list-style-type: none"> ▶ No air conditioning which was uncomfortable for the older people due to the hot weather. ▶ Limited space – 25 patients were accommodated and the conditions were very crowded (probably only suitable for 15 to 20 older patients who required care). ▶ No disabled shower facilities – they coped for the short 2 day stay but could be a problem if the temporary accommodation was required for longer periods.
4 March 2011	Don Craney Goondiwindi / Yelarbon	<p>Was of the opinion that we should not just concentrate on flood levels but also consider the volume of water in the flood – his records indicate that the 2011 flood level at his property was 40foot similar to the 41.6 foot recorded in 1976 but he contends that the volume of water in 1976 was much greater than 2011.</p> <p>Believes that in 1976 much of the water diverted down Waylon Creek which flooded substantially, but in 2011 most of the water flowed down the MacIntyre and the Waylon didn't flood so it may be that the river flow has changed due to levy banks and other infrastructure.</p> <p>Concerned that with similar rainfall to 1976 and greater volume of water that the levy bank at Goondiwindi could fail because the natural flow of water has been changed and floods are now more concentrated in the Macintyre. Believes that consideration should be given to some works being completed east of his property to restore the flow of water to some of the other creeks during floods.</p> <p>Believes that there would be substantially more damage if Goondiwindi town flooded - particularly to council assets.</p>
22 March 2011	Reginald Inglis Inglewood	<p>Priority matters to control flooding considered to be:</p> <ul style="list-style-type: none"> ▶ Coolmunda Dam levels policy ▶ Removal of trees and debris in McIntyre Brook Town Road ▶ Potter's Road Bridge to replace the causeway ▶ Diversion drainage required – Milmerran Road to Canning Creek ▶ High level drainage required for McIntyre Brook under Tobacco Road to Bracker and Catfish Creek ▶ Weir is required at the mouth of Canning Creek
24 March 2011	Jason Quinnell Inverell Shire	<p>Cr David Jones from Inverell Shire is doing some research into the recent flood heights in comparison to historical records in order to update the Disaster Management plans for the Dumaresq River areas of their Shire. They are keen to share information and</p>

Date	Name	Summary of Key Issues Raised
		<p>work on better coordination with neighbouring councils.</p> <p>Their enquiries with the Bureau of Meteorology indicate that Goondiwindi Regional Council is the owner the Automatic Gauge at the Dumaresq River bridge</p> <p>Would like the phone number of the gauge to access the data and wanted to know if GRC can provide the number</p>
<p>28 March 2011</p>	<p>Mandy Lydement Inglewood State School</p>	<p>There are two problem crossings, Mosquito Creek at Palamar, Mosquito Creek Road and Canning Creek crossing, Greys Road.</p> <p>Mosquito Creek crossing – this creek crossing floods regularly (in the wet months) as water form Mosquito Creek and Bodumba Creek converge just before the crossing. The crossing is a slab on the ground and is at a narrow point of the creek, thus water moves very quickly over the slab. There are no depth indicators, or slab edge markers – making it very dangerous to cross even at a relatively low height. The other problem is the entry and exit to the crossing, it becomes very slippery and boggy, causing cars to slide. When this creek is up are cut from town.</p> <p>The Grays Road crossing is a low slab – in places lower than the creek bed – it floods and stays cut for some time (when this creek floods still have access to town via Mosquito Creek Road).</p> <p>The crossing at Palamar being cut means that quite a few people further along the road have no access to town.</p> <p>There are at least 12 individuals/families that either live or have stock on blocks, out past the crossing.</p> <p>If the crossing at Palamar had a proper raised slab, they would rarely be cut from town for more than a day or two at a time.</p>