













# Capricorn Coast Flood Mitigation Strategy Stage 1 A presentation to support Livingstone Shire Council's application for funding



# Livingstone SHIRE COUNCIL

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# Project Summary The Event and its Impact

On 26 March 2014, Livingstone Shire was impacted by a short sharp rainfall event that coincided with a Spring High Tide. This caused flash-flooding across the Capricorn Coast and rural hinterland, creating extremely dangerous road conditions, landslips, widespread road closures, and severe inundation of homes and businesses.

This event was declared a State Disaster and had the following impacts:

- Many businesses within the CBD and Commercial Precinct were closed for up to 5 days – incurring financial loss due to forced closure, damage to stock and physical damage to buildings
- Damage to homes, personal property and trauma impacts for some residents
- Damage to Council roads, footpaths, parks, buildings and other public infrastructure
- Lost time to Council many maintenance and construction projects have been delayed in order to address flood impacts
- Temporary decline in local and regional tourism visitation
- Significant cost for collection and disposal of debris
- Damage to investment and employment confidence in the area and fear of repeat events
- Disruption to services and road network.

It could have been worse!

- The peak time of the major flooding was exacerbated by an incoming high tide which prevented storm water from getting away.
- Had this event coincided with the highest astronomical tide (a king tide), flood water levels could have been up to 1.0 metre higher.



# Project Description The Problem

The recent wet season after two decades of prolonged dry seasons has highlighted a significant integrated drainage problem within the Yeppoon CBD/Commercial Precinct.

- The local road network in and around the CBD has various roundabouts, rises and other hydraulic controls, which in times of major rain events do not cope with the high volume of overland stormwater flow. As a result, the recent rain event saw water run off and pool into the Yeppoon CBD/Commercial Precinct.
- Rainfall and severe wet weather events cannot be prevented and on many occasions there is minimal notice in which to prepare a community for impact. This event was the result of an intense 90 minute storm. Flood mitigation rather than response is therefore essential for Council and the State Government to minimise the debilitating cost of such events.
- It would be unacceptable to experience repeated events of a similar impact that we believe can be minimised. With first-hand experience of the problems, Council has identified solutions that will mitigate the extent of future damage.

Three key causes contributed to the impact of the March 2014 flash flooding:

- Convergence of Ross and Fig Tree Creek catchments
- Run-off coinciding with High Tide in the Estuary
- Multiple obstructions to overland flow paths between the CBD and Estuary.





# **Project Description** The Solution

A collection of six complementary and integrated projects are proposed for the Yeppoon CBD/ Commercial Precinct which either redirect stormwater flow, or reduce/remove physical barriers to increase capacity of the road network to cope with the high volumes of stormwater flow.

#### Why our projects will succeed

- Our projects are based on a real and recent disaster - drawing on first hand assessment and observation by Mayor, Councillors, Engineering Staff, Emergency Services personnel, and people directly affected 'on the ground' before, during and after the event.
- Package of six complementary projects that collectively deliver real outcomes.
- Low cost, high impact, practical interventions delivering exceptional 'value for money' outcomes by simply removing 'artificial' barriers from existing flow paths.
- Practical, tangible, visible works that can be implemented now – no need for further plans and studies.
- Low risk, as all works to be performed by Council on existing road reserves or Council land.
- No environmental impact. None of the works require disturbance of natural vegetation or marine environment.



# Project 1 Arthur Street and Queen Street Intersection

- **Problem** The roundabout levels are a blockage to surface flow during major rain events along Arthur Street from James Street to Fig Tree Creek. The current hydraulic control at the roundabout is causing the diversion of flow east towards James Street.
- **Solution** Removal of the high ground level, by regrading and lowering the roundabout at this intersection, will allow greater stormwater flow capacity along Arthur Street from James Street to Fig Tree Creek, and away from the main CBD. Upgrade of the roundabout to a signalised intersection may be required (signals installed at Council's cost).

Improvement of stormwater flow along Arthur Street will help to decrease the loading on James Street, and will divert water away from the main CBD.

**Total Project Cost \$500,000** 





# Project 1 - Current water flows



# Project 1 - Proposed water flows



# Project 2 Queen Street and Barry Street Intersection

- **Problem** There is hydraulic control in place at the median and road crown which results in stormwater flowing into the Yeppoon CBD.
- **Solution** Removal of the hydraulic control from the middle of the intersection by lowering the median and road crown to improve the stormwater flow path across Queen Street into Barry Street and away from the CBD.

Total Project Cost \$300,000





# Project 2 - Current water flows



# Project **2** - Proposed water flows



# Project 3 James Street and Hill Street Intersection

- **Problem** There is a hydraulic control at the corner of this intersection which currently prevents a high volume of stormwater flow being directed away from the CBD.
- **Solution** Relocate the hydraulic control to the road crown in Hill Street. Additionally, upgrade the footpath and garden beds to improve the stormwater flow path from James Street, around the corner, and into Hill Street.

Total Project Cost \$300,000





# Project **3** - Current water flows



# Project **3** - Proposed water flows



# Project 4 Cordingley Street Depot Channel

- **Problem** The hydraulic flow control at the crown of Yeppoon Road requires greater capacity for stormwater flow in a major rain event. Stormwater is required to be diverted from Cordingley Street towards the mangroves and away from the Tanby Road commercial area.
- **Solution** Create a new road and drainage channel between Cordingley Street and Rockhampton Road through Council land (Cordingley Street Depot), and create a culvert under Yeppoon Road.

Total Project Cost \$1,500,000





# Project **4** - Current water flows



# Project (4) - Proposed water flows



# Project 5 Old Railway Station Relocation

- **Problem** The Old Railway Station and platform presents a significant hydraulic blockage to stormwater run-off from Arthur Street (North) and Park Street (North). The culverts under the Old Railway Station building have limited capacity and the surface flow is currently diverted into the James Street catchment causing flooding at the James Street and Hill Street intersection.
- **Solution** Relocate the Old Railway Station and platform to western end adjacent the very popular Pineapple Rail Trail.

This project is subject to approval of Station owner.

#### Total Project Cost \$750,000





# Project **5** - Current water flows



# Project **5** - Proposed water flows



# Project 6 Yeppoon CBD - Whitman Street Channels

- **Problem** The existing open channel from Whitman Street to Fig Tree Creek does not have sufficient hydraulic flow capacity to cope with stormwater flow requirements associated with a Major Rain event.
- **Solution** Widening the existing channels in accordance with Queensland Urban Drainage Guidelines.

**Total Project Cost \$300,000** 







# Project 6 - Current water flows



# Project **6** - Proposed water flows



# Outcomes

The six complementary projects proposed for the Yeppoon CBD/Commercial Precinct will provide flood mitigation against major rain events of the future and will deliver the following outcomes:

### Community

- Increased community resilience
- Many homes and service providers protected from inundation
- Avoid "pockets" of community being cut off due to road closures
- Minimising impact of future events (property damage, clean-up, disruption and stress)
- Livingstone Shire has been identified in the Local Submission to the Queensland Plan as key to regional population growth. Improvements will better facilitate this growth
- The Shire is a residential base for FIFO/DIDO mines and resource workers and their families. Maintaining the road network and continuity of services will have a positive effect to the mining and resources sector.



### Economic

- 100 commercial premises protected from inundation
- Decrease in insurance claims and costs
- Decrease reconstruction and recovery activities and costs
- Avoid key transport/access roads being cut eg Tanby Road
- Flood mitigation for the CBD and key commercial precinct eg Tanby Road/ Cordingley Street
- Avoid impact to multimillion dollar tourism industry
- Increased future land use opportunities for commercial precinct, particularly bulky goods and retail.



### Governance

- Highly visible demonstration of State/ILocal Government partnership delivering practical cost effective solutions
- ▶ Real outcomes protecting people, property and the local/regional economy
- **b** Low risk, low cost interventions delivering high impact/benefit solutions, capitalising on local, real life knowledge and experience and backed by previous flood analysis studies
- End-to-end solution, treating both 'source' of problem and 'downstream' knock-on impacts post intervention
- Impact to Livingstone Shire will have a flow on impact to our neighbouring Rockhampton Regional Council, largely due to our integrated lifestyle and workforce whereby residents live and work in alternate urban centres.



#### Environment

- No damage and little disruption to native vegetation and marine environment
- ▶ No erosion, scours or siltation
- No change to water quality.

### **Project Funding Summary**

	Projects	LCS Funding	State Funding Requested	Total Project Cost
		\$'Million	\$'Million	\$'Million
1.	Arthur St and Queen St intersection	0.250	0.250	0.500
2.	Queens St and Barry St intersection	0.150	0.150	0.300
3.	James St and Hill intersection	0.150	0.150	0.300
4.	Cordingley St Depot channel	0.750	0.750	1,500
5.	Old Railway Station and platform relocation	0.375	0.375	0.750
6.	Whitman St channels	0.150	0.150	0.300
Total		1,825	1,825	3,650

# Conclusion

Livingstone Shire Council and its community does not want to experience the same consequences from a future flood event that can be avoided through the State and Local Governments implementing the proposed flood mitigation projects.

- Council has a proven track record in delivering joint funded projects. Our projects are based upon the findings of a recent flood event and builds upon the mapping undertaken for the 2009 Flood Study. Council has expert engineering and construction staff with many years of local experience and knowledge which will enable workplace health and safety, urban drainage guidelines and heritage regulations to be considered and dealt with accurately.
- Upon completion of these projects it is envisaged that the community will be afforded immediate mitigation from future, repeated damage from severe rain events.
- Council is ready, willing and able to partner with the State Government to implement these solutions and bring about real outcomes and benefits for our community, including those who choose to visit or invest in the growth and potential of our great Shire.
- Council has confirmed its commitment to these flood mitigation projects with a willingness and proposal to commit 50% of the project funds.



# Appendix 1 Media clippings





due to flash flooding, dents were urged to ff the roads, as the rather made driving ions dangerous and s managed to negotiate the o arrive on scene at 5.37pm.

Rockhampton Rd Capricorn St, Gracen Alexandra St, North

armer Creek due to wate

Rockhampton Bruce Hwy (Benaraby-Rockh

over road Bruce Hwy (Gin Gin-Benaraby) at Gen

Famborough Rd, amborough Keppel Sands Rd, eppel Sands Mount Chalmers Rd,

Tanby Rd, Yeppoon

surface damage Bruce Hwy (Benaraby-Rockhampton) at Archer Flats (north of Bajool) due to potholes Fitzroy Developmental due to boggy conditions Flood warning for coastal river catchments between Yeppoon and Bundaberg, Gpm Wed 50-100mm of rainfall fell in the 24 hours to 9am Wed over coastal river catchments between Yeppoon and on) at

CAPRICORNIA FORECAST Today: Cloudy. Rain. Possible heavy falls. Isolated Overnight falling to the orts of any major idents as of 7pm last low 20s with daytime

were expected to bring falls up to 100mm over the next 6 hours across warning area. Fast river level rises in Calliope River catchment. Rises were possible in the Boyne, Kolan and Don



SI WHERE IT FELL

PAGE 3

Big wet hits coast



### **Council still** assessing area's flood damages

LIVINGSTONE Shire Council is continuing to assess the damage caused by last week's wet weather event.

A council spokesperson said a number of roads were already under repair, and these repairs would be prioritised based on the level of damage and the traffic demand on the road.

On Monday, a geotechnical engineer inspected the landslip on the Scenic Hwy at Statue Bay.

Debris will be cleaned up today, but the road will remain closed until council considers a report next week. A detour is in place.

The Yeppoon Landfill is accepting flood-damaged items free of charge and anyone who requires assistance should contact council on 4913 5000 by tomorrow to arrange a roadside collection. River level rises are expected in the Mackenzie and Fitzroy Rivers this week but will remain below minor flood level. Minor flood levels continue on the Dawson River around Baralaba and river levels



#### **Rain misses** mark in CO

ROCKHAMPTON may have received a good drenching this week, but farmers further afield are still waiting for some much-needed rain.

Kevin Pickersgill (pictured above), who lives at Washpool about 80km south of Blackwater, said they only received about 36mm.

said they only received about 36mm. "It's pretty depressing," he said. "It's that dry at home, this will probably put a spark in the grass. "Something is better than nothing, but I hope it keeps

He was in Emerald yesterday ne was in Einer au yester day and said that town didn't receive much rainfall either. He said if they don't get rain in the next few days they will probably miss out.



over from the old Mt Chaimers Quarry, which was shut down years ago. One chunk was the size of her fist, which she found about 20m from their driveway. Ms Russell has recorded how much rain they have had on their Coursered memority area since they Her Ulcanbah property received about 19mm on Tuesday and Imm yesterday, a cruel taste of the weather they're so desperate for. She also said the small amount of rain was enough to make it a bit greener, but not enough to make a cimificent immact significant impact. "This is the first time I can remember that the river hasn't run by this time."

Flash flood facts

number

Rachael Conaghan

THE rain has been welcomed by

much of Central Queensland for the relief it has bought, but for

residents in a Cawarral street it

residents in a Cawarrai street it has uncovered a big problem. When Tamara Russell went to observe the rainfall on her property, she said she discovered the rain had washed away bitumen on Tookers Rd and owneed elumber of nebector

She said the asbestos was left

Cawarral property ever since they moved there 17 years ago, with records kept in a drawer on their

records kept in a answer on their six acce property. From 6.30am Tuesday to 6.30am Wednesday they had 182mm, and another 170mm from then until 4.30pm on Wednesday. Cawarral Rd was closed around

wer from the old Mt Chalmers

exposed chunks of asbestos

#### SES kept busy

AS MOST people in the greater AS MUSI people in the greater Rockhampton region stayed indoors where possible, SES crews and emergency services spent the day in pouring rain providing assistance to residents in the region. SES regional director Wayne Hepple said SES crews were primarily taked with sandhanginn primarily tasked with sandbagging and protecting leaky roofs with tarps. Yesterday to 4pm they responded to six jobs in Rockhampton, seven in

number. Wayne urged people to drive to the conditions and remember "if it's flooded, forget it". He also encouraged residents to do preparations to become self-sufficient. If you know you live in an area prone to flooding, make sure all driving and nutree are before sure all drains and gutters are clear, urchase sandbags and trim If you require assistance from the

Gladstone, one in Mt Morgan and

nine in Yeppoon, which were called in through the SES's 132 500





SCATTERED: This 48 hour rainfall graphic to 9am, March 26 shows heavy falls on the coast but patchy rain across areas of CQ.

12.30pm yesterday. "Our dam has been overflowing since yesterday (Tuesday)

- morning," she said. "There is water and washouts all along the roads, it's just crazy. "There was a road seal over the
- top of it (the asbestos) until all this rain now, and obviously it's
- SES following storm or flood events please phone 132 500.

#### Scenic Hwy closed

THE Scenic Highway is expected to be closed for around four days after a land slide near Statue Bay

esterday afternoon. SES Local Controller Eddie Cowie visited the site yesterday to inspect the damage, check on residents and make sure no properties were at

He said civil engineers will look at the site to determine whether it was safe.

"There's been a fair bit of damage to the road itself," he said. Road closures as of 6pm

exposed it all," Ms Russell said. She contacted the council after discovering the asbestos. one Shire Council said

Livings Livingstone Shire Council said they would issue a response, but were unable to respond before print deadline yesterday because all officers were out monitoring road conditions.

- esterday: Bungundarra Rd, Bungundarra Charles St, Yeppoon Coorooman Creek Rd, Cawarral Dairy Inn Rd, Ironpot Jeffries St, Yeppoon
   Scenic Hwy, Statue Bay
   Old Byfield Rd, Mulara Old Byfield Rd, Mulara Stanley Ave, Yeppoon Taranganba Rd, Taranganba Water Park Creek Rd, Byfield Farm St, Kawana Stack St, Koongal York St, Kawana Burnett Hwy at Mt Morgan
- Roads open with caution as of 6pm yesterday: Byfield Rd, Maryvale

#### Things under house all gone in a flash

TWENTY minutes is all it. So that the has never so that the source of th to choose what we ater was in the wanted to keep ee the grass," Mark esterday. Around 5pm to 6pm, the ack and it water throughout Yeppo had risen over many str as well as the bridge ov Fig Tree Creek near Yeppoon Central.

t which was on a ad moved, and Yeppoon Central. Sonja said the contr under their house we things they hadn't ything under eezer floated away creek as well as a things they natare unpacked yet. "We had kid's photos furniture, a lot of it we h ther things." " ter had risen half fur furniture, a lot of it we had to go through and throw out anyway but it would have been good if got to choose what we wanted to keep," she said - Amy Haydock inder their two-me which the mily of seven had just started renting in "The owner of the house

eath her house in Creek after yesterday's ined many of their PHOTO: AMY HAYDOCK, ROK27

Wednesday, April 2, 2014



# **Dancers in flood drama** dry clothes to wait until their parents could collect them. "Tm still in a bit of shock," she said as she surveyed the damage around her. Luckily most of her things were on racks out of the

A YEPPOON dance studio natic evacuation ter rushed into in the middle of a students aged

SWAMPED: The view from Yeppoon's Chemart Pharmacy as water kept rising in James St. PHOTO: CONTRIBUTED

Owner Tegan Devine wa forced to carry one of the girls through hip-high floodwater that had risen "We thought we would be safe indice but it came in shockingly fast. "It happened so fast, 1 didn't know what to do. "I never expected anything like that. The road started filling up." The girls' parents could not drive their cars through the floodwaters, so Tegan bought them lack to her house and gave them some floodwater that had risen outside while her assistance teacher grabbed the other two. They carried the terrified girls to Tanby Bd to wait as her studio filled with water. The girls were all really seared, the rain on the roof was so loud.

THE BIG WET: ONLINE CON Is this caused by climate change or the wet season? readers ask BarbOfGladstone, Teolooa: It must be Climat Change! Ha! Ha! Isn't that what we are supposed to blame? Gracemere: It's called T H E W ETSE A S.O.N. It generally goes from November to March and is really nothing out of the box in the greater scheme of things. Now we get a wet season or a drought and it's the end of the world according to all the Allenstown: Please quote or state where we can find that "evidence" from those evidence is there from NASA, CSIRO, BOM, Royal Society Control, BUM, Hoyal society and other data sources. E equarights from Central Queensland: Try to Convince the LNP that climate change is real and is slowly creeping up on us all... rain this heavy for March is unusual but it's not climate-change related sources KjW-55 from Rockhampton: Oh please expand on your knowledge of this fact Mr equarights. It's quite easy to make a blamc? TheRockyOnen The Range: Generally there is a correlation between great rainfall and flooding. But, what climate change looks at is systematic change



Rachael Conaghan and Kara Paradies Meanwhile the Scer

PACE 1

APRICORN Coast CAFEDORN Coast residents have been left to mony up the mess after torrential rain closef roads, flooded homes and businesses and caused businesses busines Highway near Statue Bay closed after to of dirt and rock collapsed of the sheer cliff face and blocked the road on Wednesday. Up above, million dollar homes were lucky to avoid any significant damage. Cr Ludwig said the cliff face had been eroding over a long period of time and

of Meteorology, more than 50mm battered the region in the 48 hours to 9am yesterday. Rockhampton received 170 4mm in the same time period. council would speak to property owners and other stakeholders to discuss the best way forward to find a

best way forward to find a long-term solution. He said the Local Disaster Management Group had been activated on Wethesday and wuld remain so over the next 24 hours to monitor the situation. "The focus for council and SES cress over coming days will be on cleaning up, cleaning debris from drains and road/way, assessment of damage, and providing assistance where requested to the community who have been immacted." In said stone Shire Council Livingstone Shire Council ayor Bill Ludwig lietured) yesterday said eavy rainfall at the coast ad an incoming high tide fit the water with nowhere 90

left the water with inswires to go. Locals captured some amazing photos, showing knee-high water in the main street of Yoppoen. Cr Ludwig said SES workers, police and council crews had been out in force

#### Flash flood facts

emperatures failing to retween 18 and 22 with laytime temperatures eaching around 30. Tomorrow: Partly clou icattered showers. Chai

Tomorrow: Parity cloux Scattered showers. Chan thunderstorms from the afternoon. Winds east to northeasterly and light. Damage assessment Residents affected by flooding are encouraged

Residents affected flooding are encouragi register for a free dar assessment service

Flood warning for coastal minor flood level are po rivers Yeppoon to NSW in the areas of heaviest rivers teppoon to now border as at 5pm yesterday Rainfall totals up to 325mm were recorded across the warning area in the 24 hours to 9am Thursday, with the heaviest falls over coastal ents between Yeppoon



Flood options in spotlight

- Scen - Wate Byfield - Josk Sands - Bouli Mandlay Lne at M - Farm Kewana - Capr Macquai For fu themore affected residents and businesses with free access to Yeppon landfill and, where necessary, will provide roadside collections to dispose of flood affected materials or property. Those who recuire assistance should contact staff on 4913 5000 or 1300 790 919, or visit www.livingstere old gov au. vingstone Local Disaster lanagement Group. A rapid response team has een established to work with count to assist any the clean up. Mayor Bill Ludwig, who chairs the Local Dasster Group, said the free assessment would be conducted by the Queensland Fire and Rescue Service. "Council is also providing Road Closures - Ocean Circle, Yeppoon



#### Hairdressers cut off water





barricaded doors with towe and glad wrap to keep the



### be affected include the Calilope, Boyne, Baffie and Kolan rivers. Capricarnia Forecast Today: Cloudy, Scattered showers and thunderstorms. Winds north to northeasterly and Light. Overnight and Gladstone. River level rises above the **Floods stop paper**

getting through IF YOU didn't receive your Capricorn Coast Mirror last week, you weren't the only one. Last week's heavy rain and flash flooting caused havoc on the coast, some of suburity which

100

havoc on the coast

portion of their stock but were able to deliver the balance. We apologise for the inconvenience to those who did not receive their paper last week.

66 Heavy rain and flash flooding caused



reach, but her

replaced. The studio has been open for about a year.



PAGE 5

Big wet hits CQ

FLOOD RESTORATION

Common-sense is needed with road LIVINGSTONE mayor Bill

Ludwig is speaking to ministers about changes to federal funding after the destruction of the turn-off

to Barmoya sporting facilities off Barmaryee Rd

After the road was

After the road was washed away in the 2013 flood event, council accessed federal funding

to repair the road, but a condition of the funding

was that the road was

NS

FLOC TO T

CAP

#### npleted to the same PAGE 6 need appr road to be flood

intac He talki abou with payin cost





water into its reppon business. The owner of Tanzer's Autocare has owned the shop for 12 years and said despite all the flood events to hit the region over that

points take care to no those that are still in

6 Councillor Tom Wyatt uncil crews ve been orking around clock. ague o Council are currently stigating some struction legalities due oncerns brought to the ntion of Council, "Cr att said. We expect to see a ston made in the next weeks. While I know it taken some time to whe the various issues

NG ISSUE: Cr Tom Wyatt is keen I

# Sands' water hazard

KEPPEL Sands could well ier an island by 2100, secording to coastal seconding to constail hazard maps on the Department of Revironmental and Heritage Protection withsite and Capitoria Conservation Council es ordinator Michael McCabe wants the State flowernment to take the warning seriously. The Queensland Government has advised Government has solvised beeal Councils that was level rises of 0.5 metres due to elimite change are being debited from constal bazard mapping. Michael McCabe and the was structure desires dear move came despite clear

65 Michael McCabe .. familiarise themselves with the predicted erosion and storm surge maps advice from scientific experts that many Queensland coastal zones could expect sea level rises. between 50-100 cm by 2100. between so-100 cm by 2000. He said Queensland should be compling up its protections against sea level rise and sitem surge, not ignoring scientific predictions.



### **Crews to fix** beach access

Councillor vows to repair facilities ructed toilet on the nade at Zilzie was stal. toing issue.

Wednesday, April 2, 2014



THE majority of Livingstone businesses impacted by last week's intruming again. Mayor Bill Ludwig said. Most of the clean-ap-should be completed within two week's, a crews from the Livingstone Shire Queensland Fire and Basicus Sarvise continued to work through the washed, Mr Lutwig stot. Basizesises and homes were flooded, rouds were severely duranged and the been so string in onic "The water must have been so strong in some areas, given the way it has grouged up the roads." The Livingstone Council with apply for disaster rollof funding from the state and reading from the state and federaligovernments. Ms Landry said she had already been in discussions

6 Caytom Cost MIRROR

**Businesses** 

recovering

from flooding

65 Michelle Landry

News

THE majority of

rely damaged and the enic Hwy was closed by a

andslide after more than 90mm of rain fell on the drive in 46 hours Cr Ludwig said the

ncil was working rtime to address



finishing the recovery operation and looking at olutions. "It's been a great team

By AMY HAYDOCK

"It's have a grees com-effort from the council workforce, SES and all the state agencies involved. "The community has also clearly risen to the challenge as well."

MAJOR SLIP: Landslip Scenic Hwy Statue Bay, PHOTO ALLAN REINK RONG ADJMFLODD

# Dubris left after floodwaters swept through Fig Tree Craek.



- North - ta

#### Livingstone Mayor Bill Lodwig and Copricornia MP Michelle Landry at the devastated Barmaryee sportsfield PHOTO-AMY HAYDOCK **Resident cleans up flood debris**

#### 65 Helen Hardstone

FREQUENTLY walking the fain Beach of Yeon Main Beach of Yeppoon, Helen Hardstone wasn't going to ignore the mose that last week's flash flooding had caused. So she asked around for garbage bags and gloves, and for

KEEP IT CLEAN: Byfield

rearidient Molect Mariatone with her daughter Amanda Hardstone and granddaughter Amaila Rickard (contro) cleaning up. FRITO\_AMY HANDOCK

rounded up iser doughter and grandshaughters and sharled removing rubbesh from the shore. "It's all man mode plastice size thougs and bubble, crub poos and so many plastic hogs it's absolving and it's detrimental to marine life," Belen soil. "I am a rosil basch person and I havers i seen it hosi sunded up her day It's all man-made plastics like thongs and so many plastic bags it's shocking "I am a road beach person and thaven't seen it hold hits this before, and here isolated like the worst-affected area." Noppoon received more than 500mm of roan in yest two days just week, causing and it's detrimental to marine life.

flash flooding in more parts of the town as well as a

and bottles, crab pots environmentally consciou and so is my daughter and you feel a little bit better about doing something," Holen aud.

Holen axid Helen axid Landeare and the lavingstone Shire Council assisted with signfying the bags and glowes as well as the collection of the rubbish

Inudalip in Statue Bay Many homes lost their bolongings to the raging waters, resulting in debris washing up at the mouth of Hoss Creak. "I'm very environmentally conscious



Wednesday, Marth P. 2010



"Central Querensiand, recently hatteriel by Cyclene Dylan wells and high tides, in vulnerable to increases in use level and correspondent of the second our second base of the Mr McCabe said." "The necessit base of fourism factories on Great Keppel Island, wwes neutropping dures from baseherough to Zitie, baseh erossion, damaged routs and other public infrastructures should serve "Central Queensiand,

infrastructure should set as an early warning of what would happen if what would happen if planners and investors listor to Gowernment advice and ignore the science. "COC strongly urges

Isanes, Livingsbung, Racificanynen and Gladstone Councils In reject Satte Gonzerminent attorukes to dimitae change attorukes to dimitae change attorukes to dimitae kwei in theiri planning schumes. "Removing rising sen issei from hanzard suspoing is at abrogatien of responsability."

Mr McCabe said it passed responsibility to local government, created uncertainty for industry and increased risks for tomeowners and investor:

"We urge people to familiarise themselves with the predicted ecosion and storm

sarge maps on the Department of Environment and Heritage website before they are removed from view," he "The mans show that

"The maps show that Keppel Sands certif become an island and sex water could flow under the Bruce Highway south of Rockhampets and into Depot Hill. "Concerned residents should contact their local MFs and dremand that Coastal University on the

Coastal Hazard maps remain available.

# Appendix 2 Letters of Support



Rockhampton Office: Level 2, 130 Victoria Parade, Rockhampton PO Box 1313, Rockhampton Q 4700 Capricorn Coast Office:

Ross Creek Roundabout, Scenic Hwy, Yeppoor PO Box 166, Yeppoon Q 4703 Email: admin@capricornenterprise.com.au

Web: www.capricornenterprise.com.au Ph: 07 4927 2055 Fax: 07 4922 2605 ABN: 72 142 612 280

Capricorn Tourism & Economic Development Ltd Trading as Capricorn Enterprise



-2-

Just as the appreciation and relief from businesses to witness the construction of the Yeppen section of the Bruce Highway is palpable, so too will be their appreciation, to receive the appropriate infrastructure works delivered by government, to the Yeppoon township.

Again, I commend Livingstone Shire Council for its dedicated support to our business community in applying for these much needed funds to help protect our regional economy.

Yours sincerely,

Jampanall

Mary Carroll Chief Executive Officer

Justin Commons Director Corporate Services Livingstone Shire Council PO Box 2292 Yeppoon Capricorn Coast Qld 4703

Dear Justin,

20<sup>th</sup> May 2014

On behalf of the Directors and Members of Capricorn Enterprise, the region's peak tourism and economic development Organisation, I commend Livingstone Shire Council for its proactive approach in seeking critical funds for flood mitigation to protect businesses and the community from future major damage and danger, as was experienced earlier this year.

The flash flooding experienced on 28<sup>th</sup> March 2014 in the Yeppoon CBD and the extended CBD area to Tanby road, was extraordinary and the loss of trade and detrimental affects on some businesses is still being realised.

Just days ago I received a letter from Capricorn Printing, a long standing business in Yeppoon, which will be closing its doors at the end of the financial year, due to damage to their equipment sustained by flooding events earlier in the year, consequential equipment failure and delays from their insurance company. Had this flooding not occurred, this business would be trading as usual.

There are approximately 100 individual small businesses in the main CBD area of Yeppoon and another 150 in the extended CBD area (Shopping Centres and along Tanby Road). Nearly all of the businesses in the main street (James St) and adjacent streets (Arthur, Queen, Barry streets) experienced flash flooding of their premises, with major stock loss, along with many businesses along Tanby Road.

We have received anecdotal reports of many insurance claims being lodged and still being processed, some businesses hesitant to provide financial loss figures as they quite simply just want to get on with business. These small business owners are so busy working *'in their business'*, they get frustrated by the time required completing insurance claim forms, surveys and discussing personal business details with government and organisations. A view often expressed is that their local government efforts in constructing adequate infrastructure, supported by their industry body should be sufficient to help protect their businesses from future natural disasters.

We saw similar behaviour post the 2011 and 2013 Rockhampton floods when the CQUniversity and Capricorn Enterprise conducted extensive research to assess the economic impacts of those extraordinary events. That detailed research and final report however clearly articulated the financial loss to businesses, to the city of Rockhampton and to the Capricorn Coast, and was the catalyst to lobbying government in helping to secure nearly \$300 Million dollars of Federal funds to raise the Yeppen floodplain crossing into Rockhampton to the south on the Bruce Highway.

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 Capricorn Tourism & Economic Development Ltd

 Trading as Capricorn Enterprise



Queensland Fire and Emergency Services

Ph: 4938 4988 Our Ref: LSC Support

22 May 2014

Letter of Support for Livingstone Flood Mitigation Projects

To Whom It May Concern

This letter serves to advise you of Queensland Fire and Emergency Services (QFES) support for Livingstone Shire Councils' proposed Flood Mitigation Projects.

Livingstone Shire regularly experiences torrential rain events resulting in flash-flooding which significantly impacts on the local road network and Central Business District (CBD) and surrounds. This was highlighted with the recent event on 26 March 2014 and TC Ita when many of the arterial roads were cut.

Livingstone Shire Council are very proactive in disaster management including planning, preparing, responding, and recovery. The flood mitigation projects proposed by Council demonstrate this commitment and have a plan to address the risks that exist in relation to natural disasters. These risks are real and without mitigation will in all likelihood, continue to impact on this community.

Council has recognised that the road engineering in and about the CBD, its channels and adjacent salt plains leave the community open to repeated impact in similar events.

As an organisation with significant expertise in engineering and construction, and with staff with many years of local experience and knowledge, we are confident of Council's ability to deliver these projects to the community's benefit. Council's previous flood studies also give us confidence in the appropriateness of the mitigation works proposed.

As a small community, mitigation of impact will not only save the Council and State Government significant repair and response bills, it will also lighten the impact on key agencies such as ours.

If you require any further information please do not hesitate to contact Robert Ferguson, QFES Area Director on (07) 4938 5003.

Yours sincerely

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Eamonn Lennon Acting Regional Director Central Western Region Queensland Fire and Emergency Services.

Emergency Management

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