Wagga Wagga City Council

Flood Futures

Central Wagga Community Meeting

4 December 2012

Start Time: 6:10pm
Finish Time: 8:00 pm
Location: Council Meeting Room, Civic Centre

Main City and North Wagga Levee Upgrade – Central Wagga Community Information Session

Councillors present:
Deputy Mayor Andrew Negline, Councillor Dallas Tout, Councillor Yvonne Braid, Councillor Garry Hiscock, Councillor Julian McLaren, Councillor Greg Conkey, Councillor Paul Funnell, Councillor Kerry Pascoe

Apologies:
Mayor Rod Kendall, Councillor Kevin Poynter, Councillor Alan Brown

Present:
James McTavish – State Emergency Service
Deputy Commissioner Steven Pearce - State Emergency Service
Reuben Robinson – GHD Pty Ltd
Steve Manwaring – Office Environment and Heritage

Council Officers:
Phil Pinyon, Heinz Kausche, Andrew Crakanthorp, Lindsay Tanner, Luke Grealy, Nadine Crowley, Vanessa Keenan, Belinda Maclure, Kate Amos, Brad Jeffrey

Opening Vanessa Keenan
Welcome Deputy Mayor Andrew Negline
Outline of Presentation Vanessa Keenan

Presentation Project Manager - Brad Jeffrey

- What is the proposed upgrade of the levees project?
- Historical flood heights
- History of the levees
- What has happened so far with the proposed upgrade of the levees project?
- What is planned for the proposed upgrade of the levees project?
- Project Funding - Since 2007 Council has been successful in obtaining funding for this project from the NSW State Government and the Commonwealth Government.

Based upon the concept designs the estimate for the project is $18.8 Million. This includes $11.5 Million to be spent on the Central Wagga levee and $7.5 Million to be spent on the North Wagga levee.

- Review of Environmental Factors - Reuben Robinson

Social, environmental and economic impacts assessed including specialist studies for indigenous and non-indigenous heritage, noise and vibration and ecology.

Questions

What is Flood Modelling?

We are planning for a bigger flood than 1974
The 1 in 100 yr flood has been modelled as an 11.3m river at the Hampden Bridge. The model improves flood studies that were previous done and includes over 200 flood levels taken from the 1974 flood to improve its accuracy. The model is based upon survey data accurate to within +/-0.15 metre which was taken in 2008. The modelling is 2010 data. The model itself is accurate to within +/- 0.25 metre. Brad Jeffrey

What impact will the upgrade of the levee have on North Wagga?

There will be an increased depth of water as a result of the levee upgrade. The depth varies depending upon where you are located in the floodplain as well as the distance from the point of restriction in the floodplain near the Gobbagombalin Bridge. For North Wagga, there will be an approximate increase of 0.15 metre
For East Wagga, there will be an approximate increase of 0.12 metre. For Gumly Gumly, there will be an approximate increase of 0.02 metre. Brad Jeffrey

How do I interpret the concept designs?

There is a fact sheet available on our website which shows you how to interpret the designs. www.wagga.nsw.gov.au/floodfutures
If people need assistance please call 1300 292 442 or email leveeupgrade@wagga.nsw.gov.au and ask for assistance. Brad Jeffrey

How do I get further information?

One on one appointments can be made with a Council officer at your home or at Council by calling 1300 292 442 or emailing leveeupgrade@wagga.nsw.gov.au All information is available on Councils website www.wagga.nsw.gov.au/floodfutures Brad Jeffrey

How can I share my views?

Submissions will be received up until 18 March 2012. Submission can be in the form of letters or emails
Please post to PO Box 20, Wagga Wagga NSW 2650
Or email us at leveeupgrade@wagga.nsw.gov.au
Vanessa Keenan

www.wagga.nsw.gov.au/floodfutures
1300 292 442

Open Discussion - Comments, Statements, Questions and Answers

Comment
Concerned about the walkway end of Higgins Avenue having been taken away – spoken to Council thinks it should be replaced

Response
Included in the concept designs are pedestrian ramps so that people can easily and safely access the walking tracking on top of the levee. Council's intention is to also seal the walking track and pedestrian ramps to protect the top of the levee from erosion. Brad Jeffrey

Question
Are Council aware of the accident that occurred to a friend of mine – came down the bank near Knights and she broke her arm – there was only one spot showing a footpath down the levee near back of a motel. When the upgrade happens will there be places to get down off the levee that are safe?

Response
As Brad mentioned, the concept designs include a number of pedestrian ramps along the length of the levee so that people can safely access the Wiradjuri walking track as well as the river itself. The batters of the Main City levee banks on the city side would be flattened wherever feasible to a gradient of about four horizontal to one vertical. This would improve access to the river. Reuben Robinson

Question
Reuben will you also include social impacts on communities upstream who will have significantly more water into their properties as a result of levee upgrades?

Response
The closer you are to levee the greater the impact will be. Impacts will not occur until we experience a flood greater than a 1 in 60 year flood. We are currently working on producing a map of the floodplain which will show the modelled depth increase as a result of the proposed levee upgrade. Reuben Robinson

Question
Did you do any modelling when the Masters development was allowed? What does an Environment Impact Statement cost – can you really do anything. If there's a 500 year old redgum in the way will you just knock it over?

Response
With the regards to any development in the flood plain, planning rules apply as per the Development Control Plan for that particular suburb. For example in East Wagga the flood planning level is 0.5m above the 1 in 100 year flood level.

Everything that happens within the floodplain affects water flow and may impact upon surrounding properties. Council typically asks developers to undertake a flood impact assessment for their proposed development to assess what impact it will have on surrounding properties.

The Review of Environmental Factors for this particular project has been quoted at around $80,000. Brad Jeffrey

The GHD ecology team has GPS locations of significant trees and noted trees requiring removal. At North Wagga there are 2 or 3 major redgum trees with major habitat value so levee design will be modified. With regard to River Red Gum forest removal we're talking about 0.6 percent of the forest within 500 metres of the levees. Of this only three trees are hollow-bearing. Reuben Robinson

Question
How is this figure of 11.3 m arrived at as 1 in 100 - does it have integrity. Has Council agreed to upgrade? If so why not get on with it?

Response
The 11.3m flood height is determined from Council's most recent modelling which was adopted by Council in 2010. The model is a two dimensional model which uses aerial laser survey as its topographic base which as a result has produced a very detailed and accurate model that has a accuracy rate of +/- 0.25m.
Council has completed the feasibility stage of this project to determine whether or not it is actually feasible to upgrade the levees. This community consultation phase will provide Council with information so that they can make an informed decision about how to proceed in the future, based upon the responses from the community. Brad Jeffrey

Question
Insurance – how often does the Insurance Council of Australia monitor our flood maps so we can avoid being hit with premiums of $5000 per household?

Response
All of Councils flood modelling has been on the website since 2010. Council has spoken to a lot of insurance companies since the March 2012 flood and we direct them to the modelling reports on the website. Brad Jeffrey

Question
With regards to East Wagga – have you looked at Marshall's Creek? Also the businesses in East Wagga – can you say how much levee will affect each business?

Response
Regarding Marshall's Creek, localised or overland flooding is influenced by large catchment of Crooked Creek and Stringybark Creeks. Council has also done some overland flow modelling and that report is also available on Council's website. Most of our stormwater system is designed for 1 in 10 year events and in industrial areas 1 in 20. For the East Wagga area, the increase in depth as a result of the proposed upgrade will be in the order of 0.1 to 0.13m – we can tell you specifically about your property - please make an appointment. Brad Jeffrey

Question
What sort of communication does Council have with Burrinjuck – I spoke to an officer up there said it depended on water coming from many other places. How are St George and other regional centres in QLD managed?

Response
In regards to our two storages (Blowering and Burrinjuck) both are built as water storages and not for flood mitigation – they do however take the top off the flood – in this year's flood event – Burrinjuck started about 75% - inflows were about 320 megalitres per day – discharge was a little over 240 ML p/d – very little water came out of Blowering during this event.

In the March 2012 flood there was a large contribution to the flow in the Murrumbidgee River from flow coming out of the Goobragandra valley via the Tumut River. Our ability to influence storage is limited. Apart from environmental flows – long drought influences need to keep dams full. Our influence is nearly zero. Both 2010 and 2012 floods – the airspace was taken up very quickly. With regards to Blowering – Snowy Hydro puts water in at top – they are obligated when Blowering is spilling that they can only release pre flood flows amounts – that means they can't make flood worse – there is provision for 10 % airspace – but it's for power generation not for flood mitigation. James McTavish

Question
This modelling is prior to the Masters development?

Response
Yes that is correct, the modelling is based on 2008 survey data. Brad Jeffrey

Question
How much clearance is under the viaduct on Tarcutta Street?

Response
There is a flood mark on the concrete slab that the track sits on which shows the level that the March 2012 flood reached. Brad Jeffrey

Question
Previously Kevin Wales said he was worried about East Wagga and building up dirt on floodplain – how are you coordinating the flood study with this development? People aren't doing their sums in development – the dirt is being trucked in – for example Copland Street there are truckloads of dirt being brought in - with salinity changes in planning – when you pass developments are these taken into account?

Response
With development in floodplain as I mentioned before there is State Legislation that guides us – with development of large commercial property – and they must do flood impact assessment to show what the impact may be.
Our model is based on 2008 survey information which cost Council approximately $160,000, so therefore it is not economically feasible to renew the survey data every time there is a new development. It is generally a good practice to update the flood modelling and survey data every 5 to 10 years so that all changes in the flood plain are included. Brad Jeffrey

Comment
Spoken to the GM regarding Stringybark Creek already at capacity – these are things been discussed in last 10 years – need to take into consideration for development – salinity must be coordinated with flood modelling

Response
You'll be pleased to know we are now integrating all our planning layers including flood extents and salinity into Councils new spatial plan – we're about to update this plan and its well informed regarding overland flooding and riverine flooding. The pressure in the past on Council has been to grow and those effects are now being felt. There is no doubt that the spatial plan will be heavily influenced by Council's most recent flood modelling data. Andrew Crakanthorp

Question
The point has been made that the modelling is based on earlier figures – modelling needs to be updated more frequently – we're located 21km west of Wagga – the difference between 2010 and 2012 - in 2010 zero rainfall leading up to that event but in 2012 we had 8 inches rain in Wagga catchment – plus lot of rain this side of dam walls. There is a choke point at Malebo Hill when the river reaches 21ft. The modelling doesn't show west of Malebo hill. It's fine to say with 11.7 levee this will happen – and every flood is different. I feel you need far more modelling - you also have to factor that we're constantly running a higher river – these constant environmental flows need to be taken into account.

Response
Council does have a model which was adopted by Council in March which covers the entire Local Government Area. Council is also currently undertaking modelling for Tarcutta, Ladysmith and Uranquinty catchments. At some time in future we will combine all these models. Following the March 2012 flood event the State Emergency Service engaged the services of a company from Sydney to collect information about the flood from people living in the flood plain. They have collected hundreds of photos and survey points, all this information will be included in future modelling to improved the accuracy. Brad Jeffrey

Question
With the Environmental Plan stating habitat will be preserved – over recent years there are far more trees in flood plain for example between here and Cartwrights Hill.

Response
The topic of vegetation impact on flooding was raised before we did the most recent modelling. As a result we ran several modelling scenarios including high, medium and low density vegetation. The outcomes of that modelling suggested that vegetation on floodplain, particularly between the Main City levee and North Wagga has minimal impact upon the flow of flood water. However, one of the recommendations made in the 2010 flood modelling report was to produce a vegetation management plan along river. Brad Jeffrey

Question
Mentioned pushing water further upstream – where do you mean? Will you build bigger levees around Marshall's Creek. You stated you are using 2008 survey figures – will you use updated figures?

Response
Yes that is correct, there will be an increased depth of flood water for upstream properties if we experience a flood greater than the 1974 flood event as a result of upgrading the levees.
We are currently producing a map which shows the increase in flood height within the flood plain.
There is no plan to increase the bank heights of Marshalls Creek.
Once we receive the revised rating tables for the Murrumbidgee River from the NSW Office of Water for the March 2012 flood event we will be revising our modelling as the 1 in 100 year flood level will change. The 1 in 100 year flood level is based upon 150+ years of rainfall data. The probability that a flood event will occur is based upon a statistical formula calculated using the historical rainfall data. So theoretically the level does change after every flood event. Brad Jeffrey

Question
Has modelling considered what lifting the North Wagga levee to 10m will affect? I've got 2 businesses in East Wagga – once river hit 10 metres – water was coming through my shop. Just want to know what difference will be next time if levee upgraded.

Response
No we haven't run a separate scenario - only done based on upgrading on both levees being raised. But if you want this included we can. We don't have modelling for North Wagga levee to 10m. Although we can use the existing model to determine what the flood height will be in areas like East Wagga once the river reaches 10m. Please make an appointment for a one on one discussion so we can speak specifically about your properties. Brad Jeffrey

Don't forget floodplain is 8km wide – think about water being spread over this area. So over that massive floodplain impact will be quiet small. If we have event like March – there'll be no extra impact even with levee upgraded – it's only when we get a massive flood event. Heinz Kausche

Question
The integrity of existing levee, there were lots of rumours about integrity – will new levee have greater integrity?

Response
The levee as it is now has undergone substantial geotechnical assessment. The intention is to replace sections of the levee that do not pass the engineering parameters required for structural integrity. Brad Jeffrey

Regarding the rumours – the levee is 30 years old. The event in March was the first time the levees were loaded that much since 1974– this current study is also about assessing the integrity of levees – we recognise standards have improved so as far as construction methods and standards will be a lot better. Heinz Kausche

Question
Said that you haven't done modelling on just raising the North Wagga or just Central levee. What about alternatives? We need info on other options.

Response
There are other options – could include house raising or voluntary purchase. This is about getting your feedback. If you would like other options investigated please place them in your submission. Brad Jeffrey

Question
In the letter I received it says "current levee protects against a 2.7 river". At 9am 6th March told it was 10.7 m river and a 10.9 metres. We know about tragedy at Lockyer Valley because lack communication between people at dam and the weather bureau. Lockyer valley was an obvious choke point because they didn't control dam upstream. Decisions are made in Sydney. Was evacuation of Wagga and overreaction because what happened in Lockyer valley?

Response
I don't shy away from the decision I made to evacuate central Wagga. The current levee is certified to provide protection against a 10.7m river. QLD issues didn't enter my thinking – most significant

loss of life event was Gundagai in 1852 – that resulted in the relocation of town. SES will always act in interests of public safety. The information we used to come to that decision – was influenced by Council's flood modelling - I wish every Council had gone to this level of modelling. In QLD the SES is Local Government – in NSW it is State Government. In case of major release from Burrinjuck – they are required to advise BOM, downstream communities and SES. It is a complex floodplain with many tributaries. James McTavish

Question
In 2010 Dec there was a flood inside the levee bank causing considerable damage – Council then had task of extracting that water and pumping into river. Is this type of flood taken into consideration?

Response
Yes in 2010 there was a high river and localised rain event – overland flow modelling is to look at where most risk is for example at Wollundry lagoon – in 2010 this building was flooded –a pump was installed across Tarcutta Street and we are currently investigation options related to overland flow flooding to mitigate the risk to properties and infrastructure. Brad Jeffrey

Question
Have you done geotech before now? If you don't go ahead with the complete levee upgrade will you do staged remediation works?

Response
Yes we've done extensive geotech –approx every 150 m along the levee – sections were less than perfect – for example we replaced a 200m section near Higgins Avenue because damage had been caused by ants building nests in the levee as well as a dead tree. We plan to do more geotechnical investigation as part of the detailed design. Brad Jeffrey

Question
Will you call tenders and will local companies get that work?

Response
Yes, we will call for tenders and to date all geotechnical investigations have been done by local companies. Brad Jeffrey

Question
In reference to 1 in 100 year model – under the Murray Darling Basin Plan – if your modelling is based on static river height of 2 metres - is the 11.3m model appropriate – because we will have a constantly higher river.

Response
When we talk about 1 in 100 it is based on statistical probability. After every flood – NSW Office of Water revise tables so we are expecting in February a revised rating table based on the 2012 event. Brad Jeffrey

Question
All the modelling is based on information prior to the Murray Darling Basin Plan resulting in higher river – is your modelling going to be enough?

Response
Every flood is different. Depending on height of river + rainfall event - with modelling they take an average river height then add a component "safeguard" to that modelling – we could have a 1 in 100 year storm event on a 3m river – we can't model every outcome. Brad Jeffrey

Comment
Need to take on board circumstances have changed because State and federal decisions will lead to a constantly higher river.

Question
Is the earth method the best way to build up levees – should you use concrete slabs?

Response
Different types of levees are included in the concept designs depending upon the restrictions within the area of the levee. The reason that earthen levees are most commonly used is because they are typically 1/3 the cost of retaining walls or concrete levees. Brad Jeffrey

Question
Already budgeted $18.8m - realise local business have to contribute – are State and Federal funding guaranteed up to and beyond $18.8 million?

Response
Current funding from State Government is on 2 for 1 basis – we have funding for detailed design at this stage and further applications will be made every year. Regards future funding – Council and other community groups such as the Committee 4 Wagga Wagga for example are actively lobbying Federal and State Governments for additional funding support. Brad Jeffrey

Question
What is the difference in height between North Wagga 1 in 17 and the proposed 1 in 20 levee?

Response
The current levee at North Wagga is certified to provide protection against a 9.6m river. The proposed upgrade of the levee will provide protection for North Wagga to a 10.0m river. Brad Jeffrey