

12.05. INFASTRUCTURE

12.05.1. Ivanhoe Crossing

DATE:	28 June 2016
AUTHOR:	David Klye, Director Infrastructure
RESPONSIBLE OFFICER:	David Klye, Director Infrastructure
FILE NO:	RD.09.31
DISCLOSURE OF INTERESTS:	Nil

VOTING REQUIREMENT

Absolute Majority

OFFICER'S RECOMMENDATION

That Council;

1. Request a regulatory review of the crossing by Main Roads Western Australia with a view to implementing;
 - a. A speed limit of 10 km/h on the crossing,
 - b. The Installation of "Give Way" signs on the crossing.
 - c. Prohibition of stopping on the crossing other than for stopping at the passing bay to allow the passage of oncoming vehicles.
2. Notes that establishment of the speed limit referred to in the decision above may necessitate the establishment of step down limits on both sides of Ivanhoe Crossing.
3. Prohibit the use of the crossing by pedestrians.
4. Prohibit the public from alighting from vehicles on the crossing.
5. Designate Ivanhoe crossing as a single lane crossing.
6. Install signage advising of risks associated with, fast flowing water and strong currents, a slippery or slippery when wet road surface, unprotected edges and drop offs and to drive into the water slowly.
7. Erect appropriate signage to advise and manage the implementation of decisions 1, 3, 4, 5, 6 and 7 above including the meaning and use of the depth markers on the crossing, at an estimated cost of \$6,500 which shall be charged to the Ivanhoe Crossing Reconstruct account.
8. Notes that the additional signage referred to in decisions 1, 3, 4, 5, 6 and 7 above will cost an estimated \$6,500 which shall be funded from the 2015/16 forecast budget surplus.
9. Request the CEO to formally acknowledge and thank the representatives from Water Corporation, Department of Parks and Wildlife and Main Roads Western Australia for their attendance at the public forum and for assisting the Shire in its community consultation.

10. Note indicative costs for detailed investigation into how best to manage the culverts with precast concrete units is approximately \$50,000 and that a budget allocation is therefore required for the 2016/17 financial year to progress this issue.

Cr Perry moved an amendment to the item to remove dot point 10.

COUNCIL DECISION

Minute No: 11413

Moved: Cr D Spackman

Seconded: Cr S Rushby

That Council suspend Standing Order 7.5.

Lost 3/6

For: Cr K Wright, Cr S Rushby, Cr D Spackman

**Against: Cr J Parker, Cr E Bolto, Cr A Petherick, Cr S Cooke,
Cr N Perry, Cr B Robinson**

Cr Wright requested that Cr Robinson's comments be recorded.

Cr Robinson – point of order – Councillors have had 4 days with the agenda item to seek any clarification regarding the agenda item and we are getting into technical detail.

Cr Wright asked if the red and white reflective markers meet Main Roads standards. Mr Klye replied that he cannot provide an answer to the question.

Cr Wright requested that Mr Klye's comments be recorded.

Cr Spackman – foreshadows a motion to remove points 3 and point 4 and an additional point to address the culverts so they don't block up.

COUNCIL DECISION

Minute No: 11414

Moved: Cr N Perry

Seconded: Cr B Robinson

That Council;

- 1. Request a regulatory review of the crossing by Main Roads Western Australia with a view to implementing;
 - a. A speed limit of 10 km/h on the crossing,**
 - b. The Installation of "Give Way" signs on the crossing.**
 - c. Prohibition of stopping on the crossing other than for stopping at the passing bay to allow the passage of oncoming vehicles.****
- 2. Notes that establishment of the speed limit referred to in the decision above may necessitate the establishment of step down limits on both sides of Ivanhoe Crossing.**
- 3. Prohibit the use of the crossing by pedestrians.**
- 4. Prohibit the public from alighting from vehicles on the crossing.**
- 5. Designate Ivanhoe crossing as a single lane crossing.**
- 6. Install signage advising of risks associated with, fast flowing water and strong currents, a slippery or slippery when wet road surface, unprotected edges and drop offs and to drive into the water slowly.**
- 7. Erect appropriate signage to advise and manage the implementation of decisions 1, 3, 4, 5, 6 and 7 above including the meaning and use of the depth markers on the crossing, at an estimated cost of \$6,500 which shall be charged to the Ivanhoe Crossing Reconstruct account.**
- 8. Notes that the additional signage referred to in decisions 1, 3, 4, 5, 6 and 7 above will cost an estimated \$6,500 which shall be funded from the 2015/16 forecast budget surplus.**
- 9. Request the CEO to formally acknowledge and thank the representatives from Water Corporation, Department of Parks and Wildlife and Main Roads Western Australia for their attendance at the public forum and for assisting the Shire in its community consultation.**

Carried 5/4

For: Cr J Parker, Cr S Cooke, Cr N Perry, Cr E Bolto, Cr B Robinson

Against: Cr K Wright, Cr S Rushby, Cr D Spackman, Cr A Petherick

REASON FOR VARYING OFFICER'S RECOMMENDATION

To spend additional funds on an investigation for a design solution that will require additional funds to implement is not a good use of rate payer monies.

PURPOSE

To advise Council of progress with regard to Ivanhoe Crossing and to seek guidance on the imposition of a speed limit and restrictions on the use of the crossing.

NATURE OF COUNCIL'S ROLE IN THE MATTER

Leader - plan and provide direction through policy and practices

BACKGROUND/ PREVIOUS CONSIDERATIONS BY COUNCIL/ COMMITTEE

Council at its ordinary meeting of 24 June 2014 voted unanimously in favour of the following decision:

COUNCIL DECISION

Minute No. 10452

Moved: Cr K Wright

Seconded: Cr B Robinson

That Council supports reopening of the Ivanhoe Crossing subject to:

- 1) consideration of funds in the 2014 / 2015 Rural Roads Maintenance Budget to enable signage, repairs and maintenance;**
- 2) requesting Watercorp and the Department of Water to lower the level of water below the Diversion Dam to undertake repair and maintenance works as identified by Main Roads WA;**
- 3) assigning a 15T load limit to the crossing; and**
- 4) accepts that the crossing will only be open for vehicular traffic during times when the water level over the crossing is at a level safe enough for vehicles to negotiate.**

Carried Unanimously 9/0

Council at its ordinary meeting of 27 January 2016 made the following decision:

COUNCIL DECISION

Minute No. 11240

Moved: Cr D Spackman

Seconded: Cr A Petherick

That Council reinstate the oversize rocks in front of the open culverts at Ivanhoe Crossing

Carried 5/2

For: Cr D Spackman, Cr A Petherick, Cr S Rushby, Cr K Wright, Cr E Bolto

Against: Cr B Robinson, Cr J Parker

Council at its ordinary meeting of 23 February 2016 made the following decisions:

COUNCIL DECISION

Minute No. 11273

Moved: Cr S Cooke

Seconded: Cr N Perry

That Council revoke Minute 11240: that Council reinstate the oversize rocks in front of the open culverts at Ivanhoe Crossing.

Carried: 6/3

For: Cr J Parker, Cr K Wright, Cr B Robinson, Cr S Cooke, Cr E Bolto, Cr N Perry

Against: Cr D Spackman, Cr S Rushby, Cr A Petherick

COUNCIL DECISION

Minute No. 11274

Moved: Cr D Spackman

Seconded: Cr A Petherick

That a desktop safety audit be requested of Ivanhoe Crossing and any findings be included in the community information

Carried 9/0

COUNCIL DECISION

Minute No. 11275

Moved: Cr S Cooke

Seconded: Cr N Perry

That Council:

- 1. Immediately initiates community consultation in the form of both public survey (published on Facebook and in the Kimberley Echo), and a community forum, to ascertain the primary use of Ivanhoe Crossing from a community perspective. The results of both to be brought back to Council for consideration at a near future Briefing Session,**

Carried 9/0

STATUTORY IMPLICATIONS

The *Local Government Act 1995*, Section 3.1 applies to this item.

POLICY IMPLICATIONS

There are no policy implications associated with the recommendations of this report.

FINANCIAL IMPLICATIONS

The recommendations of this report will result in a further over expenditure of the capital item for Ivanhoe Crossing - Reconstruct. The budgeted amount for Ivanhoe Crossing - Reconstruct is \$35,594, the current expenditure against this account is \$39,749. The expected cost of the recommended signs is estimated to be approximately \$6,500, that will be sourced from the forecast 2015/16 surplus if approved.

STRATEGIC IMPLICATIONS

Strategic Community Plan 2012-2022

Goal 2: Greater returns from regional investment to ensure sustainable provision of appropriate physical and social infrastructure

Objective 2.3: Assets are appropriate for their intended purpose and factor in whole of life costing and maintenance

Strategy 2.3.1 : Manage and maintain assets in a strategic and cost effective manner

RISK IMPLICATIONS

Following the completion of an in-house desktop safety audit in relation to this project some inherent risks associated with the crossing were identified including danger to vehicles using the crossing and danger to people in and near the water. These risks have been identified and strategies are in place to satisfactorily mitigate the risks. The Shires Insurers, LGIS, are currently being consulted in relation to the desktop safety audit.

The risk assessment identified a number of risks and outlines mitigation measures to bring each of these risks into the "LOW" category. These risks and the corresponding mitigation measures are discussed below;

There is a risk that a vehicle could be washed to the kerb or washed over the edge of the crossing due to a combination of deep water and high water velocity. To mitigate these risks, it is intended that the following measures be put in place in addition to the signage that has already been installed providing appropriate advice on the use of the crossing;

1. Request a regulatory review of the crossing by Main Roads Western Australia with a view to implementing;
 - a. A speed limit of 10 kmh on the crossing,

- b. The Installation of “Give Way” signs on the crossing.
 - c. Prohibition of stopping on the crossing other than for stopping at the passing bay to allow the passage of oncoming vehicles.
2. Advise the public not to alight from vehicles on the crossing.
 3. Advise drivers regarding correct use and interpretation of the depth markers on the crossing.
 4. Use of the crossing will be limited to periods when the water level and water depth is below a predetermined acceptable threshold.
 5. The crossing will be closed when water levels exceed a predetermined level using boom gates and concrete blocks installed specifically to close the crossing.

There is a risk of conflict between pedestrians and vehicles, of pedestrians being washed off the crossing by a vehicular bow wave or of pedestrians falling on or from the crossing. To mitigate these risks, it is intended that the following measures will be put in place;

1. Prohibit use of the crossing by pedestrians.

There is a risk that a person in or near the water could be attacked by a crocodile. To mitigate this risk, it is proposed that the following measures will be put in place;

1. Erect signage advising of the danger of crocodile attack.
2. Erect signage advising that approaching or entering the water is dangerous.
3. Erect signage advising against approaching or entering the water at the crossing.

The risks discussed above relate to the crossing and use of the crossing. Risks associated with swimming in the river have not been addressed. Swimming is discouraged by the Department of Parks and Wildlife due to the crocodile threat in the river.

COMMUNITY ENGAGEMENT

Engagement has taken place in accordance with the Shire’s Community Engagement Guidelines and includes:

- A facilitated community forum was held on 24 May at the Kimberley Leisure Centre. Approximately 70 members of the public attended along with 8 Councillors and 15 Shire staff and representatives from Water Corporation, Department of Parks and Wildlife and Main Roads Western Australia. The sentiment of the meeting was that the crossing should be opened to traffic.
- An online survey of public opinion regarding the crossing was taken. 111 of the 113 respondents indicated that the crossing should be opened to traffic. When posed the question “For what primary purpose would you like to see Ivanhoe Crossing used in the future?”;
 - 111 respondents indicated that they would like to see the crossing used for either vehicles only or a for both vehicles and pedestrian access.
 - 2 respondents indicated the crossing should be closed for vehicles but open to for public access.

- No respondents were in favour of closing the crossing to all use.

Representatives from Water Corporation, Department of Parks and Wildlife and Main Roads Western Australia attended the public forum to assist the Shire in community consultation. It is proposed that the Shire formally write to these representatives and thank them for their attendance.

A report detailing the outcome of the survey is in Attachment 2.

COMMENTS

Ivanhoe Crossing was opened to traffic on 26 May 2016 after being closed for a number of years. The crossing is operating satisfactorily as a vehicular crossing, however, as a result of recent observed behaviour of the public at the crossing there is a need for some additional controls on use of the crossing. These controls are in line with the outcome of the desktop safety audit that was undertaken with respect to the crossing .

Some vehicles are using the crossing at speeds which produce a large spray which is considered unsafe. There is a need to impose a safe speed limit on the crossing. In order to limit speed on the crossing to 10 km/h which is considered to be appropriate, additional step down limits are required between the speed limits on either side of the crossing and the proposed 10 km/h limit.

Drivers have been observed stopping on the crossing alighting from their vehicles and taking photos, paddling in the water and washing their vehicles. Stopping on the single lane crossing effectively blocks the crossing precluding use of the crossing by other users. Due to the presence of crocodiles in the river at the crossing it is not considered safe for people to alight from their vehicle on the crossing. To reduce the risk to the public it is proposed to install signage advising that the crossing is a single lane crossing and that drivers should not enter the crossing while there is another vehicle on the crossing, to prohibit stopping on the crossing other than for stopping at the passing bay to allow the passage of oncoming vehicles and to prohibit the public from alighting from vehicles on the crossing.

In addition to the formal control that the Shire has over the opening and closing of the crossing it is proposed to provide depth markers to show the maximum safe depth of flow for use of the crossing by vehicles. This safe depth of flow has been determined to be 300 mm. It is proposed to install depth markers to the crossing clearly showing the safe depth of flow for use of the crossing by vehicles and to install signage explaining the depth markers.

There is no footpath on the crossing and it is not safe for pedestrians to share the pavement with vehicles. Additionally, due to the presence of crocodiles in the river at the crossing it is not considered safe for pedestrians to use the crossing. The flow of water across the crossing and through the crossing also presents a danger to pedestrians as a result of this it is proposed to prohibit the use of the crossing by pedestrians.

The Shire's insurer (LGIS) has suggested that signage be erected warning of the risks at the crossing and placing restrictions on its use including;

- Suitability to 4wd vehicles only and restrictions on vehicles towing caravans and trailers.
- Fast flowing water/strong currents
- Road – slippery or slippery when wet
- Enter slowly
- An imposed speed limit
- Vehicle weight restrictions (in-line with structural capacity of the crossing)
- Unprotected edges/drop off
- Single lane signage

It is proposed to install warning signage of all of the above hazards some of which have been discussed previously in this report.

LGIS also commented on the dangers to people swimming at the crossing. LGIS commented that appropriate warning signage should include the following;

- Danger of Crocodiles
- The danger of being near culverts (suction danger)
- Submerged hazards
- Deep/shallow water or potential drop offs

The Shire is not responsible for managing the river as a recreational area. As a courtesy the Shire has provided the Department of Parks and Wildlife with this advice.

Reducing the risk to people in the water

It has been suggested on a number of occasions that the culverts under the crossing should be made safe for people who may be in the water by installing some sort of flow restriction arrangement. There are problems associated with the installation of any flow restriction devices including debris build up at the intake, and reducing the flow pressure sufficiently to obviate the entrapment hazard caused by water pressure. There are many types of commercially available precast inlet structures. The Shire is not aware of, and has not been unable to locate, any commercially available inlet arrangements that are self cleaning, low maintenance and do not pose an entrapment hazard.

It is possible to construct a safe inlet system for the culverts but it will be expensive to provide an inlet that will not cause debris to build up at the intake and avoids creating an entrapment hazard. In order to construct appropriate inlets there are a number of difficulties that need to be considered including but not limited to;

- Ensuring that inlet velocities are below that which will create an entrapment hazard,
- Ensuring that the inlet is self cleaning,
- Ensuring that the inlet is low maintenance,
- Constructing the inlet in a flowing river,
- Constructing the inlet in a river that contains crocodiles,
- Obtaining DPAW approval (provision of fish passage),

Preliminary investigations in Darwin and Kununurra have been undertaken that indicate the cost for the provision of precast concrete units for use as a safe inlet for a pair of culvert pipes. A preliminary estimate of the costs are:

- \$50,000 for a detailed investigation and design of precast concrete units;
- \$8,000 - \$10,000 per unit for the manufacture of approximately 42 concrete units, which would be required to cover the culverts;
- An additional \$4,000 per unit for a grate system in a suitable material; and
- \$500 - \$1,000 per unit for installation.

The cost to construct a safe, low maintenance inlet system for Ivanhoe Crossing culverts is therefore expected to be in the order of \$600,000. Once detailed design has been finalised more accurate estimates of manufacturing costs can be established.

There is a potential environmental concern with the construction/installation of these inlets. The inlets could create a barrier to fish migration and advice is currently being sought from DPAW.

It has been suggested that closing several culverts close to the eastern side of the crossing will significantly reduce the risk to people in the water. Closing 3 or 4 culverts using steel plates at the eastern side of the crossing will make a small difference to the depth of water on the crossing for several reasons; closing 3 or 4 out of 104 culverts is a small change, culverts in that location are partially blocked and making a smaller contribution, there are other culverts across the crossing that may be cleaned out improving flow past the crossing.

ATTACHMENTS - Item 12.05.1

Attachment 1 - Ivanhoe Crossing Survey Results

Ivanhoe Crossing Community Engagement Results

Background:

Council at its ordinary meeting of 23 February 2016 decided:

COUNCIL DECISION

Minute No. 11275

Moved: Cr S Cooke

Seconded: Cr N Perry

That Council:

- 1. Immediately initiates community consultation in the form of both public survey (published on Facebook and in the Kimberley Echo), and a community forum, to ascertain the primary use of Ivanhoe Crossing from a community perspective. The results of both to be brought back to Council for consideration at a near future Briefing Session,*

Carried 9/0

Following this two opportunities were provided for the community to provide feedback to the Shire on the future of the Ivanhoe Crossing. The first was a community forum held at the Kununurra Leisure Centre on 24 May 2016 and the second was a survey which ran from 3 June 2016 to 16 June 2016.

The feedback from the community meeting assisted in the formulation of the questions for the survey.

Community Forum

The key response from the forum was that the public wanted the crossing open for vehicular use and that safety of the structure for swimming in the river was not a concern due to the presence of crocodiles. Other themes raised during the community forum are summarised below. A full listing of comments from participants in the community forum are appended to this report.

Themes from the forum:

- Uses of the Crossing
 - Vehicles,
 - Pedestrians and
 - Heavy Vehicles;
- Water Management
 - Environmental flows;
 - Differences in what has changed;
 - Gauging station
- Maintenance of the bridge
- Insurance Risks

- Responsibility of the Crossing – Main Roads or the Shire
- Water Level
 - 300mm – why
 - Difference between this and an ordinary river crossing
- Swimming - risks
 - Crocodiles
 - Culverts
- Tourism and Economic development
 - Impact of changes
- Suggested options for mitigation
 - Risk Profile plan
 - Ongoing maintenance with blocking issues with debris
 - Blocking some culverts closest to the bank
 - Clearing culverts that can be cleared
 - Blocking culverts that are partially blocked and can not be cleared
 - Installation of blockages that reduce the risk of pinning (sloping headwalls etc)
 - Seeking advice on the flow through each pipe
- Community amenity
 - More bins please

Survey Results

An online survey of public opinion regarding the crossing was taken. 111 of the 113 *respondents* indicated that the crossing should be opened to traffic. When posed the question “For what primary purpose would you like to see Ivanhoe Crossing used in the future?”;

- 111 respondents indicated that they would like to see the crossing used for either vehicles only or a for both vehicles and pedestrian access.
- 2 respondents indicated the crossing should be closed for vehicles but open to for public access.
- No respondents were in favour of closing the crossing to all use.

The detailed results from the survey are appended to this report.

Attachments:

Appendix A - Community Meeting - Questions, Comments and Feedback

Appendix B - Survey Results and Feedback

Ivanhoe Crossing Community Forum Questions, Comments and Feedback

- *Where did the water go before*
 - *EPA requirements for downstream flows all year*
- *Impacts on the wide/ high loads as the crossing is closed (may be able to come across rather than through the Northern Territory)*
- *What is the history of the problems at Ivanhoe Crossing*
 - *Refer recent incidents*
- *If there is 300mm crossing the bridge is it's maintenance up to date to be opened?*
- *Is the person who made the decision to remove the rocks here?*
 - *It is an admin decision with a view to open the crossing*
- *Where the boy was swept through – was there previously a blockage which could have prevented this?*
- *What are the insurance risks to the Shire for the three options?*
 - *The Shire has been provided advice from the insurance company*
- *Whose responsibility is the Crossing?*
 - *Main Road or the Shire?*
 - *Main Roads has a bridge engineering section*
 - *The Crossing is a Shire Asset – but has a bridge number from Main Roads*
 - *It is a Shire decision in relation to insurance and opening and closing the road*
- *Risks across the whole network but because it is a man made structure it needs to be managed*
 - *Can't eliminate all problems*
- *If you idiot proof it, the world will make a better idiot*
- *Main Roads opens the Gibb at the Pentecost at higher levels*
 - *400mm because of the river crossing analysis*
- *Take responsibility and don't swim there*
- *If someone injured themselves at the Diversion Dam – would that be closed too – No*
- *Ivanhoe Crossing is a tourist destination*
- *What is the history of issues at the Diversion Dam in comparison with the Ivanhoe Crossing?*
- *People can get sucked under with the road closed – so why not open it?*
- *Salty's upriver*
- *What are the options for utilising a grill (Option 3)*
 - *42m³/s – results in people potentially being pinned against the structure*
- *Advocate for opening the crossing*
 - *Survey of structural integrity*
 - *Signs*
 - *Issues with common sense*
 - *Entering into the water or*
 - *Too much water flow*
 - *Cotton wool removes opportunity*
- *What is the difference between a car going over or as a pedestrian and it being slippery (public liability)*
- *What is the cost to the Shire in relation to procrastination?*
 - *Justify expenditure*
 - *Spending wisely*
 - *Costs – engineering report – funded by MRWA*
 - *Recent works \$38K*

- Concrete blocks \$1.8K
- Economic impact for the west bank?
- Sighting water levels before opening
 - Used to be – if below the top of the bollards – open the road
- History:
 - Installed in 1952/53
 - Bollards have a notch at 330mm
 - Opening the Pentecost – what is the difference?
 - Serious incident while the plates were being installed
- 38 years ago – closed for the wet season and equipment had to go out via Perth
- Is there an option to install a concrete block with a tapered edge to allow water to go over?
- What has changed in the last ten years?
 - Standards change? Expectations change?
- Why did Council change its decision? Further discussions?
- Did council utilise a river engineer – did Council get presented with information on each pipe?
- Have you presented to the Council on the flow rate? Through and over?
- When were the enviro levels set for coming over the Diversion Dam?
 - ~1999
- What has changed between 1999 – 2010? With the water flow?
- The flow rate was sent when the pacific hydro started
- Prior to Pacific Hydro – the lake held water longer
- All options have the potential to get washed off and eaten by crocs – may has well have the crossing open
- Popularity of crossing the Ivanhoe
- Gauging Station is a Tarara Bar – is this an accurate representation of flow as there are a number of drains that feed into the river. D1 upstream – D2 and another downstream of the crossing.
- 2 issues
 - Vehicular access
 - Personal Safety
 - Is there an option of blocking the culverts near the edge of the river 5+ culverts
 - Note that there is a kerb on the downstream edge to stop vehicles going in
- 51 years ago an ambulance crossed the crossing
 - Open the crossing
 - Risk Mitigation
- No swimming signs – at other locations
- Safety risk if anyone goes in the water
- If the rocks go back in would the water ever go below 300mm
 - Flow rate
 - Rocks on culverts would be critical
- On the 2000s, the majority of dry season the water was driveable.
 - What has made the difference?
- 300mm – 400mm – does the vehicle type impact this?
 - Could it be a 4WD only track?
 - Once it is open it is open
 - Implications for insurance
- Open at 400mm the Durack Crossing is open
- Impacts on lifestyle – do you close the Mitchell Plateau because someone died?
- Who put the rocks in the crossing to start with
 - Concrete disks used to be installed

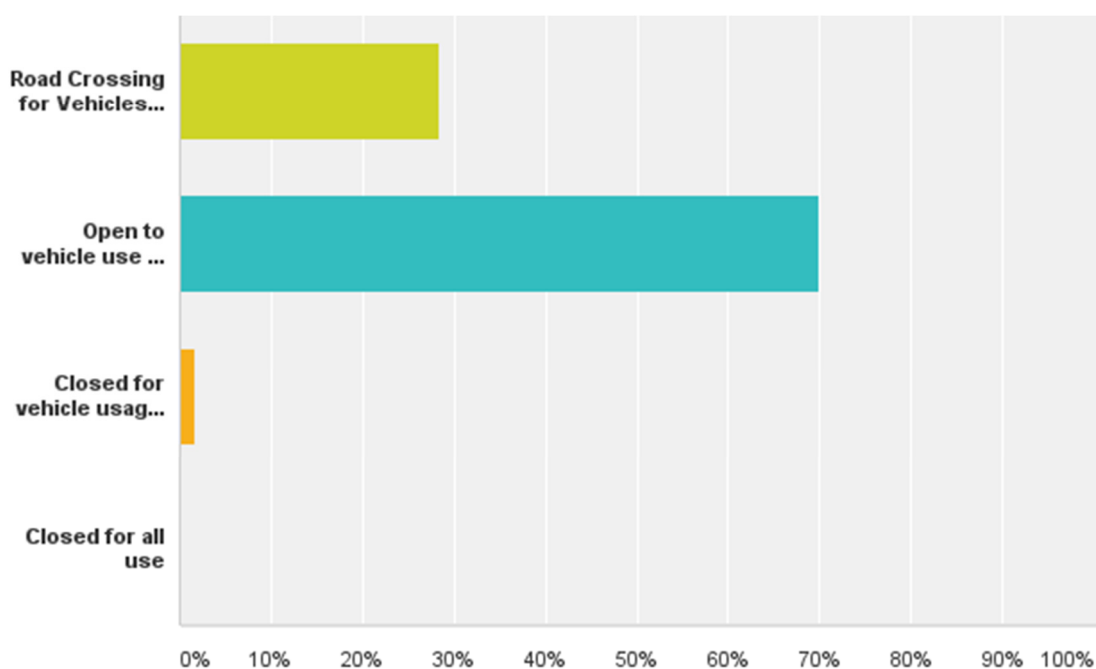
- Grates are not an option
- 300mm – 400mm engineering solution – should be able to be resolved
- Councillor request to discuss previous decision
 - Decision for the forum?
- Not comfortable with Council decision as rocks over crossing could mean that the water is too high and never be able to be opened
- Check community opinion prior to spending more funds
- Can the rocks be replaced?
- Does the community want the crossing opened – if it impacts safety?
- Impact of rocks
 - Can you pull people off the rocks? Because of the force?
- What is the cost to a rate payer regarding insurance in the event of an incident
 - Dependent on mitigation actions
- Impacts of Ivanhoe Crossing for fishing
 - Rocks back in to maximise safety – look at track record over the past years
- Open Crossing culverts up
 - Block – blocked or partially blocked to make sure that people don't get stuck
- What has been done in relation to cleaning out the culverts?
 - History of cleaning/ maintenance
- Cost implications for the cleaning out of pipes – given the limited opportunities
- Which Council meeting will it come back to
 - Not May
- If the water level is at 300mm does the road get opened
 - Yes
- Works early in the dry season are critical
- What are the options – Councillors views
 - Recorded in Council minutes
- Need to look at Safety measures
- Councillors need to look at all projects and not the hype ones – town roads/ footpaths
- *“I am an advocate for the re-opening of the above Crossing. I am increasingly dismayed at the unreasonable obstacles put in the Shires way to stall/ halt that re-opening. I think the Shire has been very responsible in its implementation to go forward with this reopening. They have done a survey into the Crossing's structural soundness, and completed associated works, a barrage gate has been installed with a very high visible sign listing the hazards that could well be encountered if one chooses to negotiate the Crossing. I think these listed hazards are reasonably exhaustive, but there's one thing that the Shire cannot be responsible for and that's an individuals common sense – associated with using the Crossing 'at your own risk'. It is unfortunate to hear of some of the 'misfortunes' that have happened at the Crossing in the past, but surely the potential is no different from other existent river crossings – if you enter the water off or about the structure or attempt to cross with too much water overflowing – you'll probably get hurt or killed – common sense - you can't blame the Shire for those poor decisions which ignore the warnings. Sureley we want to encourage people to get out and enjoy their great surroundings and be encouraged to escape the overindulgences of the town even if it does involve a bit of assessed risk? Binding people in the 'cotton wool' of lost opportunity is not conducive to celebration of life governed by self responsibility.*

Ivanhoe Crossing Survey Results and Feedback

Q1: Please provide email address (not included in report)

Q2: For what primary purpose would you like to see Ivanhoe Crossing used in the future?

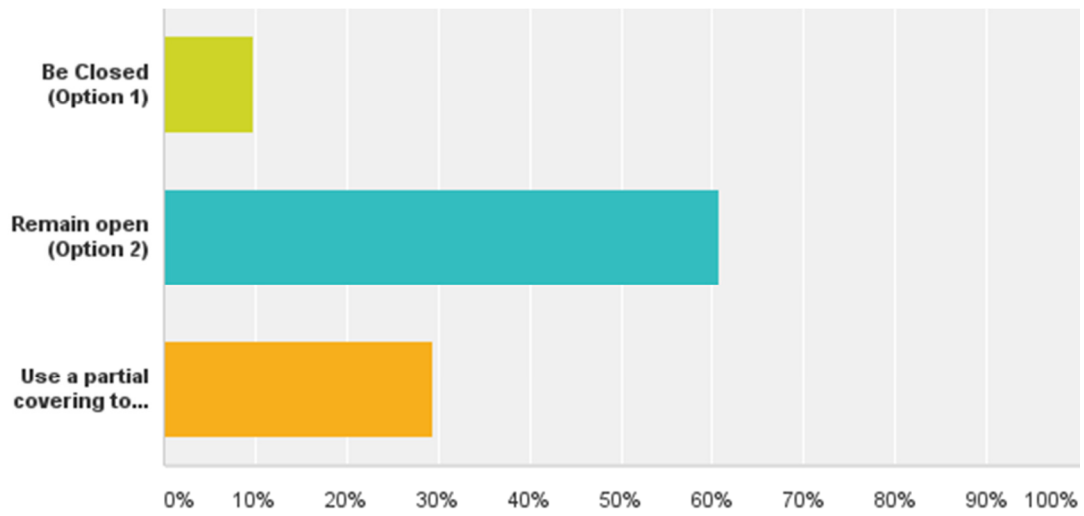
Answered: 113 Skipped: 1



Answer Choices	Responses
Road Crossing for Vehicles only	28.32% 32
Open to vehicle use and public access	69.91% 79
Closed for vehicle usage, but available for public access	1.77% 2
Closed for all use	0.00% 0
Total	113

Q3: Do you think that the culverts should?

Answered: 112 Skipped: 2

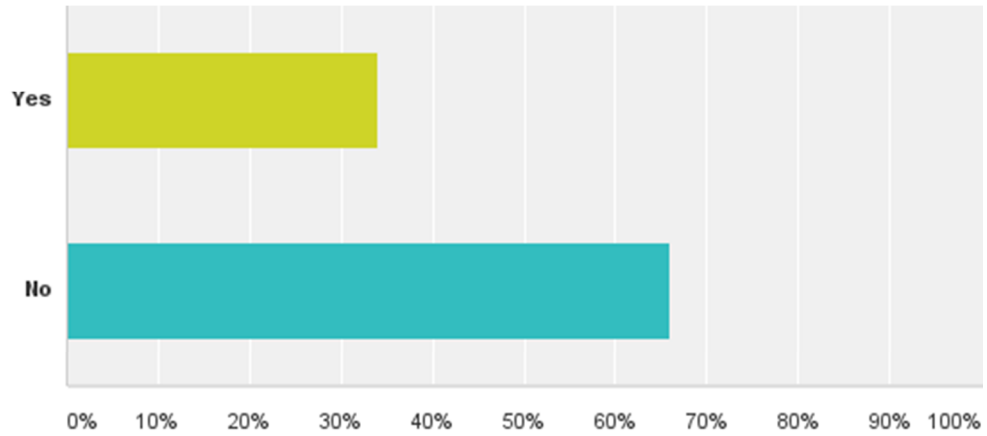


Answer Choices	Responses
Be Closed (Option 1)	9.82% 11
Remain open (Option 2)	60.71% 68
Use a partial covering to restrict the flow (Option 3)	29.46% 33
Total	112

Q4: Does your answer change if blocking or partially blocking the culverts result in the water level rising above the safe trafficable level of 300mm?

Answered: 44 Skipped: 70

(Please note that only those people who answered "Closed or Partial Covering" were provided with this question)



Answer Choices	Responses	Count
Yes	34.09%	15
No	65.91%	29
Total		44

Q5: Would you like to provide any other comments?

1	1) Swimming should not be an option at this location due to the crocodiles which inhabit the area. 2) Need to limit the number of pedestrians/ fishing off the bridge 3) Need to clear out or block the partially blocked culverts
2	Area is unsafe for public use due to the waters being inhabited by saltwater crocodiles, so public use should not be considered
3	Ban swimming in area to ensure safer outcomes for all.
4	Block the culverts closest to the banks. Run a cable along the bollards for the first 20m. This will give people something to hold onto. Most people only walk out a short way to fish, very few cross on foot.
5	Combination of restricting water flow through the culverts but maintaining the culverts safe (sloping head wall incorporating holes up to 50 mm diameter to allow water but preventing body parts/ people but enough of the culverts "opened" in this manner to allow the water flow of 42 Cusecs to maintain the roadway water levels below the 300 mm that seems to be considered safe)
6	Could it be possible to block off the first culvert on each side of the Crossing to limit the possibility of people being dragged through when in the shallows at the edge . Not everyone takes note of the signs unfortunately .
7	Council needs to create a Risk Profile or Plan to ensure that there is consistency across all decisions made by council in relation to risk. Council appears to pick and choose when certain risks are relevant, and appears to have different risk appetites for different projects depending on which councillors are pushing the project. If the shire risk profile was done - the likes of a certain degree of personal responsibility may or may not have determined the fate of the crossing 3 years ago. Regards Mat.
8	Do what ever it takes to keep the crossing open. Erect signage to instruct about the dangers of swimming above the crossing. Stop trying to be everyone's protector and let people be accountable for their actions. Maybe include on the warning signs the number and cause of past deaths at the crossing as a warning.
9	Don't let your kids swim there people.
10	Everyone is responsible for their own safety in the water or driving a vehicle across very clear you should not be in the water at this crossing
11	Having the crossing open to cars is a great tourist attraction which is another reason for people to visit Kununurra and bring business to the town.
12	I am a resident of 40 yrs, Ivanhoe Crossing was safe with the culverts closed and used for many years, Shire staff removed the blocking plates with no authority or consultation and have made it extremely dangerous, the Shire must replace them immediately before someone ends up dead, regardless of the cost. The officer responsible must be held to account and the cover ups must stop. Listen to the real locals, they know a lot more than you think, and the reasons why.
13	I am a visitor to the area and attend the meeting as an invited guest and see that closing the attraction could have a significant impact on the economy in Kununurra and could be the start of another Wyndham

14	I find the wording on this survey to be leading. In my opinion Question 3, option 2, does not fully explain the dangers of having the culverts fully open. It is MORE of a trapping hazard than Option 3, yet this is not mentioned at all in the explanation of the option. The language of Option 3 in contrast could be seen as being confrontational. This is a nature based environment. Culverts may be cleared, but there is nothing to stop debris such as sticks, logs, rocks and gravel from blocking them over time. In fact some of the culverts cleared are now partially blocked. Creating the trapping hazard discussed earlier. The Rocks were put in place previously in response to personal injury and DEATH. As I understand it there were no major injuries due to the crossing while the Rocks and screens were in place. The crossing is MORE dangerous now than it has been in years irrespective of the height of the water flowing over the river. There is no speed restriction in place for vehicles. The water level as it is now, is low enough for vehicles to travel at speed. This is a danger in itself creating the situation where by more people are likely to be washed off the crossing. Was there a safety audit done prior to the removal of the rocks? If so, will those making the decisions in this regard be held accountable for any personal injury or DEATH. If not, WHY NOT. Who is held accountable for that? The crossing and it's intended use are not up for "determination". It is something that is there, it can not be removed. Public access can not be denied. It needs to be maintained such that it poses the least practical danger to the community.
15	I have concerns about making the crossing safe for swimming. The water is unsafe fullstop
16	I think 300-400mm is still not particularly high for cars to be passing the crossing - I really do not think it is unsafe at 400mm.
17	I think it should be open to all traffic at the own risk of driver so that nothing come back on the shire or main roads
18	I would like to see the rocks reinstated around areas where kids will be in the water (even if it's ill advised) and covers over any culverts that are partially blocked.
19	If more funding is available, an option that allows proper monitoring and control of water within moderate limits (excluding flooding events) could provide use of the structure for both transport and tourism.
20	Irrelevant to this but the councillors portray a very poor image of SWEK and therefore the community as a whole. Feel for the employees! Good luck with helping them get their s#@t together!
21	Is it possible just to block culverts at ends closest to river bank to make it somewhat safer for people choosing to ignore the fact that it's not a safe swimming spot.
22	Isn't this the only crossing for over dimension vehicles?
23	It is a structure for crossing the river It is not a swimming hole It is not a fishing platform
24	It is a vehicle crossing. Regardless of grates etc it is stupid for any person to enter the water outside of a vehicle. So making it safer is just condoning people to enter the dangerous water. Self accountability of the public needs to be implemented.
25	It is no more dangerous than so many other bodies of water.

26	It was discussed at the meeting that the return of the rocks to those culverts closest to the banks would ensure the safety of those who may chose to use the crossing for reasons other than as a roadway. Given that these rocks where in place prior to 2011 and the works that has recently been undertaken and didn't increase the amount of water moving over the crossing I fail to see why these crude barriers have become such an issue. If the level of the water flowing over the crossing has increased it is because other culverts are now blocked and this issue needs addressing. There needs to be simple / clear signage at the crossing to warn people of the dangers animal and man made associated with using the crossing. It is after all a roadway not a swimming hole or fishing spot.
27	It was open for decades previously. Leave it open
28	Its a land mark let's make it as good as we can
29	Ivanhoe Crossing is a huge tourist drawcard for Kununurra. We need to make sure it is open for everyone to access for as much of the year as possible. It should never have been closed for so long in the first place.
30	Ivanhoe crossing is an amazing landmark and even if voted to be closed to traffic it should have appealing blockages to ensure locals and visitors can enjoy the beautiful scenery.
31	Keep the Crossing open, as is!!!
32	no further comment required
33	No one should be wading or swimming in that water. I don't want people to think it will be ok. If your feet are wet there you are doing the WRONG thing!
34	Non applicable
35	nope
36	Open the damn this this is getting silly now
37	People need to assess risk for themselves. Stop over regulation.
38	People need to be responsible for their and their childrens actions. It is a huge attraction for Kununurra. Leave it open!!!
39	People need to take responsibility for their actions. If children are supervised and people proceed with caution, adverse outcomes should be avoided.
40	People should read the warning signs, take care as the would usually do in any other situations? Stay out of the water!
41	Place rocks over first five culvert mouths on each side of crossing.
42	Placing large boulders on the upstream side of the culverts work well before. Not only does this safely restrict water flow through the culverts, it also offers a degree of protection to the crossing at flood levels.
43	Please keep it open. Need more bins
44	Pre-cast restrictions to culvert openings within close proximity of areas that attract swimmers would be an option as would closed culverts in close proximity to swimming areas
45	Put the rocks back how it was before this ceo decided to take them away without discussion. The water wasnt at an unsafe level when the rocks were there. You are scare mongering. And making yourself look silly.
46	So long as the Shire has the appropriate signage up re duty of care, people make their own choices whether they enter the water or not.

47	Surely it would be possible to calculate the amount of water that needs to be allowed through the culverts to keep the water level below 300mm? I would never swim, or allow my children to swim there but I also support placing some form of barriers in front of the culverts where people typically choose to swim, and full opening of the culverts where no-one ever swims (assuming this partial closure allows the water level to remain under 300mm). I think signage needs to be very clear that there are culverts and anyone swimming or falling in the water may be sucked through, not just signs saying no crocodiles or no swimming.
48	The biggest issue at the crossing is parents letting their kids swim down there, which unfortunately is going to happen whether its open or closed. Keep the culverts open and let the water go under the crossing. Lets hope we don't have to go through this ever again. Ridiculous waste of time and resources. Its an East Kimberley icon.
49	The crossing is not for swimming and as such controls should be out in place to support its prime activity as a road not to protect people who chose to swim there.
50	The culverts are part of the crossings original design and so have a designed purpose. If you are going to block/restrict flow through them you are altering the design. An engineer assessment of this design alteration should be undertaken to find if this will impact on the design of the crossing ie. extra stress on crossing and therefore life span.
51	The safety of swimmers should not be taken into consideration as the area is inhabited by saltwater crocodiles and no person should be in the water.
52	This issue has been over consulted - people need to take more responsibility around the Crossing. Not just swimming in croc infested waters, but driving across too fast or when there are people on the crossing as well.
53	This survey is not well written and I do not agree with or like the wording of option two or three. Although I have chosen option 3 it doesn't really reflect what I think. Why not included an option 4 as discussed at the meeting, something like: Open as many culverts as practically possible especially focusing on the culverts in the middle of the crossing. Then restrict only the first few culverts at each bank with rock or 'perforated material' (what that is I don't know, I do not remember it being discussed at the meeting). But NOT grates. This therefore would hopefully be expected to keep the water at 300mm or less and allow safe vehicle movement, while giving some partial consideration to safety. That would help to keep both parties satisfied. Thank you.
54	Vehicle drivers should show due diligence in assessing the water level / flow strength at the time of crossing. Access to the crossing by pedestrians / fishing / swimming should be discouraged (similar to the no pedestrian/fishing access across the Diversion Dam)
55	Very challenging to balance safety with public use and enjoyment. There is risk associated with outback adventure. part of the enjoyment is the risk factor. Warning signs , lots of warning signs.
56	Well done on getting community comment
57	Why does 300mm need to be the cut off when other crossings are considered to be usable at 350 or 400mm depth?
58	Why is council putting so much effort into vehicle access over Ivanhoe Crossing when it should be a Main Roads issue? Please focus on core SWEK business and ignore the noise from the vocal few. We don't pay \$4,000 per year rates to see so much time and energy wasted on things that aren't Council responsibilities.