

Meeting title	Extraordinary meeting of the Inner Darling Downs and Southern Darling Downs community consultative committees – Condamine floodplain crossing study methodology
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Attendees

Mr Graham Clapham – SDD Committee Chair (Chair)	Mr Geoff Penton – IDD Committee Member (GP)
Mr Robert Barrett – SDD Committee Member (RB)	Mr Justin Saunders – SDD Committee Member (JSa)
Mr Jeff Chandler – SDD Committee Member (JC)	Ms Jennifer Schmidt – IDD Committee Member (JSc)
Mr Norm Chapman – SDD Committee Member (NC)	Ms Marcia Smith – SDD Committee Member (MS)
Mr Brad Christensen – SDD Committee Member (BC)	Ms Kim Stevens – SDD Committee Member (KS)
Mr Graeme Clarke – SDD Committee Member (GC)	Dr David Taylor – IDD Committee Member (DT)
Mr Paul Hanlon – IDD Committee Member (PH)	Ms Laura Jarman – ARTC (LJ)
Mr Chris Joseph – IDD Committee Member (CJ)	Mr Gareth Rees – ARTC (GR)
Mr Ian Jones – IDD Committee Member (IJ)	Mr Robert Smith – ARTC (RS)
Mr Brett Kelly – SDD Committee Member (BK)	Ms Jo Tait – ARTC (JT)
Dr Rob Loch – IDD Committee Member (RL)	Mr Mark Barnett – FFJV (MBa)
Ms Rosalie Millar – SDD Committee Member (RM)	Mr Alan Bolton – FFJV (AB)
Ms Joy Mingay – IDD Committee Member (JM)	Mr Martin Boshoff – FFJV (MBo)
Mr Ken Murphy – IDD Committee Member (KM)	Mr Matt Dews – FFJV (MD)
Mr Lance McManus – IDD Committee Member (LM)	Dr Mark Jempson – FFJV (MJ)
Ms Maria Oliver – SDD Committee Member (MO)	Mr Luke Smith – FFJV (LS)
Mr Larry Pappin – IDD Committee Member (LP)	

Apologies

Professor Steven Raine – IDD Committee Chair	Ms Georgina Krieg – SDD Committee Member
Mr Barry Bowden – SDD Committee Member	Ms Belinda Saal – IDD Committee Member
Mr Jason Chavasse – IDD Committee Member	Ms Kylie Schultz – IDD Committee Member
Mr Ross Fraser – SDD Committee Member	

Location	Brookstead Hall, Madelaine Street, Brookstead	Secretariat	Ms Laura Jarman
Date	10 April 2018	Time	6:00 – 8:00pm

Topic	Discussion
1. Introductions and welcome	<ul style="list-style-type: none"> • The Chair opened the meeting, welcomed committee members and observers, and noted apologies. <ul style="list-style-type: none"> ○ It is good to see so many observers, but this is primarily a committee meeting. If there is time at the end, I may open up the floor to questions. There will be an opportunity to speak with members of the team following the formal proceedings. ○ Noted apologies from the Inner Darling Downs CCC Chair Stephen Raine and committee members. ○ Acknowledged James Lister MP and Pat Weir MP as being present.

	<ul style="list-style-type: none"> • Rob Smith presented a safety moment on safe travel and driver fatigue <ul style="list-style-type: none"> ○ Acknowledged long distances travelled to be at meeting tonight ○ Reminded people to take care while travelling home and to be aware of roadworks and sections of road with no line markings. • Introductions <ul style="list-style-type: none"> ○ Committee members, ARTC and FFJV staff introduced themselves and their interests.
<p>2. Project update</p>	<ul style="list-style-type: none"> • RS provided an update on the NSW/QLD Border to Gowrie (B2G) project. <ul style="list-style-type: none"> ○ On 18 March 2018, the Office of the Coordinator-General declared the B2G project as a 'coordinated project', triggering a requirement for the preparation of an Environmental Impact Statement (EIS). ○ The Coordinator-General will issue draft Terms of Reference (ToR) for the EIS for public comment in the coming months. The draft ToR sets out the matters that ARTC must address when preparing the EIS. ○ When the draft ToR is released, ARTC will run community engagement sessions to assist the community in understanding how to make comment to the Coordinator-General on the draft ToR. ○ FFJV has mobilised to site on the Condamine floodplain and started reconnaissance works. Geotechnical works will start in May. Most of the investigations in the Condamine floodplain area will be in the existing rail corridor. If we wish to access private property, this will be undertaken in accordance with our land access protocol. ○ ARTC will be hosting open house style community consultation sessions on 19 and 21 April 2018 to engage with the broader community. ○ The team has started one-on-one meetings with landowners to gather local knowledge on flooding. ○ Tonight's session is to present the methodology for developing a solution for crossing the Condamine floodplain. This is in line with industry best practice and a similar methodology will be rolled out for other floodplains within the project area. • The Chair updated the meeting on the outcome of his request to ARTC CEO John Fullerton. <ul style="list-style-type: none"> ○ I wrote to John Fullerton seeking a commitment for ARTC to fund independent studies to assist the committee to navigate complex issues and data in the EIS, including on the floodplain. ○ I have received verbal confirmation that ARTC is willing to fund some limited expert advice should it be required. This is a gesture of good faith and shows that ARTC is open to scrutiny.
<p>3. Condamine floodplain crossing study methodology</p>	<ul style="list-style-type: none"> • FFJV team introduced themselves and outlined their relevant experience. • LS provided an overview of work to date on the Condamine floodplain crossing. <ul style="list-style-type: none"> ○ FFJV has developed a methodology for crossing the Condamine floodplain. There are a number of considerations in developing a design. Flooding is important, but not the only attribute. We also consider other disciplines including geotechnical and environmental. ○ FFJV have been engaging with landowners and stakeholders to gather local

knowledge on flooding in this area. We have received a lot of valuable data. We acknowledge that people are concerned about flooding impacts.

- *Questions and discussion*
 - KM – Are you taking into account the impact to farming land and losing top soil?
 - LS – This will be addressed later in the presentation by the geotechnical and flooding discipline leads.

- AB presented an overview of the methodology that FFJV will be using to develop a solution for crossing the Condamine floodplain.
 - The flow chart is based on ARTC's scope of works.
 - The top section of the flowchart represents the next six months.
 - What we're looking at in the first half of the year is community consultation, field investigations, getting landowner inputs and starting to develop hydraulic models, carry out the hydraulic modelling and then starting to propose some design solutions.
 - The second half we look at coming back out and starting to present some of those design solutions – we're not sure how many different designs we will run. Then getting additional landowner inputs and design assessments. We will have an iterative process of updating and validating designs.
 - We have a lot of data from the first phase of project. We will be confirming the information and models, expanding it and validating it through technical investigations and landowner consultation.
 - The field investigations on site are very important – we need good information in order to develop a good design. You will see surveyors out in the QR corridor to ground truth the LIDAR aerial imagery.

- MBa presented an overview of the environmental studies.
 - The team will be carrying out field investigations and data collection to inform the EIS and floodplain study.
 - The investigations fall into one of two categories – field studies or landowner consultation.
 - The team has recently been on site carrying out reconnaissance works ahead of geotechnical investigations to identify constraints eg can we get to site, are there protected plants, biosecurity concerns, cultural heritage concerns.
 - The ecology team will soon start on the ground surveys to validate desktop studies.
 - There is a formal consultation process incorporated into the EIS process. We want and need to go above and beyond that to ensure the floodplain study and EIS appropriately reflect property and district scale concerns. We are hoping to confirm land use and operations, gather property layout details, understand movement and operational patterns, property specific biosecurity concerns and water entitlements. Gathering information through one-on-one engagement with landowners. If you feel you have information that would help, we would welcome it.
 - You will see more FFJV people in the corridor over the coming months.

- MD presented information on the geotechnical investigations in the study area.
 - We will be undertaking geotechnical investigations in the coming months. Where we can, the investigations will be in the existing QR corridor. If we wish to carry out investigations in private property, ARTC will contact landowners to seek permission.
 - The team did some reconnaissance last week and will be carrying out some non-intrusive geophysical testing in coming weeks.
 - In May, we will start borehole drilling using ute mounted and truck mounted rigs.
 - The investigations help us to design the earthworks, subgrade treatment and foundations.
 - We also look at erodibility and use this to design scour protection.
 - We will install standpipes to monitor water and feed into EIS.
 - Once we move into design stage will look at treatment for black soils.

- *Questions and discussion*
 - PH – How deep will you be drilling?
 - MD – The ute-mounted drill rig goes about five metres deep and the truck mounted drill rig will go about 60-70 metres deep but we target the 30-40 metre mark.

 - GC – Do you drill until you hit bedrock?
 - MD – Not necessarily, but we may near creeks to get the founding level for any structural piling. The drill rigs are capable of extending down until we hit that mark.

 - GC – Is bedrock your target?
 - MD – Not always, if it's in open plains earthworks solution we won't necessarily target bedrock.

 - RL – If you're doing a standard geotechnical investigation and taking soil particles size down to 75 microns, but some of these soils could be 50-60% less than 2 microns so your data won't tell you what you need to know.
 - MD – We will be running the double hydrometer which goes below that 75 microns and will break down the silt and clay particle size as well. We will be doing a cross section of studies.

 - RL – Be careful they disperse it properly.
 - MD – Yes.

- MBo spoke about his understanding of the project at this point. Noted that he would be happy to continue conversations after meeting to answer specific questions.
 - We appreciate that the Condamine is a sensitive and complicated hydrological system. Our objective is to develop tools and process to inform the design, quantify impacts and develop mitigation measures in EIS. We want to get this right.
 - We have been talking to the local community. We recognise that people have been living in this area for generations and have experienced many flood events.

- The methodology we are proposing is in line with industry standards. It is using state-of-the-art models to make those assessments. We recognise that no model is not perfect but they are recognised by engineers and scientists as being the best tool available and have been used on other projects of this nature elsewhere.
- We are capitalising on existing data from BOM and Toowoomba Regional Council.
- Some of the feedback we have heard to this point is that:
 - All floods on Condamine are different. We are aware that antecedent conditions, rainfall and cropping patterns and the state of the field influences floods and how water flows
 - People are concerned about how wide and deep floods are and don't want to see a change to existing conditions. We have heard that infrastructure has been built to existing conditions and locals want to maintain the status quo.
 - People are concerned about the velocity of water and sediment movement.
 - Water is also a natural resource – people don't want to see changes to existing flow paths.
 - Concerns about climate change and how infrastructure will cope with future climatic worsened conditions.
- MBo presented the flood assessment methodology.
 - Displayed topographical map with the two-kilometre wide study area and the Condamine catchment areas marked.
 - Other technical disciplines look at just the study area, but flooding is different – we need to look upstream and downstream to assess potential impacts.
 - We will set up a hydrology model to look at whole Condamine catchment. We know that rainfall varies a lot across the catchment.
 - First step in methodology is to set up a hydrology model of the whole catchment that we then use to interrogate rainfall records. We use stream-flow gauges to bring in rainfall conditions, catchment conditions and storage and use model to estimate flood flows for different recurrence intervals.
 - Second step in process is to establish a hydraulic model. This is a separate computer (numeric) model based on sophisticated software – it has developed a lot over past 20 years. We use this to build up a picture of historic flood events and then looking into the future for design purposes. Once you've done your hydrology (flows), you can put this into your hydraulic model to estimate the physical parameters of a flood – how high it is and how fast the water is flowing (velocities), some models can give you the physical energy that is in the water. The blue line is Toowoomba Regional Council regional flood model. We understand there are some concerns about the accuracy of Council's flood modelling and how fit for purpose it is.
 - Council's model is not detailed enough for our purposes. We will use it as there is valuable information but we will validate and calibrate through our own investigations. We will also review the inputs and assumptions that have gone into that model. We won't be using it for detailed design purposes, but as a rapid assessment tool and to assess regional impacts – upstream and

- downstream of the proposed rail.
- The red polygon is an existing model in TUflow that was developed for Phase 1 of the project to assess a number of options for crossing the Condamine floodplain. The level of calibration and validation you do increases as you move through the different design phases.
 - The yellow outline provides an indicative outline that we propose to build for the purpose of this next stage of design. We will be using TUflow again, which is an industry accredited tool.
 - Whereas Council's flood model is based on 25mx25m blocks, our model will be based on 5mx5m blocks for feasibility design purposes. It will bring in tributaries of the Condamine within the study area and look at how they interact during times of flood.
 - A critical part of the process is calibration and validation. We will look at historical rain events and compare with what is in our model and the closer the match, the more confidence we can have in the model. That's why it's so important to gather data from people on the ground.
 - As the design develops, we will test solutions in our model and compare to the baseline. It will be an iterative process that will be used to inform the design and EIS development. We will also be rolling out this same methodology on other floodplains across the study area, including Gowrie Creek, Westbook Creek and MacIntyre Brook.
 - During the design process, our priority is to try to design out impacts; however, residual impacts may remain. What constitutes an impact depends on the person. We need to run solutions through the model to identify and quantify impacts. This will allow us to have conversations with potentially affected landowners on a one-on-one basis to understand how their operations work, and how residual impacts may affect them.
 - MJ –The tools and process we are using are best practice. I have been doing this for 30 years and tools and software we use now are impressive compared to 30 years ago. The TUflow software is the best that's available globally was written in Brisbane but used across the world. We are using best practice techniques to understand impacts and how we can manage them.
 - *Questions and discussion*
 - RL – what software are you using?
 - MB – MIKE. Our model is more refined than the Toowoomba Regional Council model. There's a lot of data in this catchment. We will look at historical rain events and compare this with what is in our model and the closer the match, the more confidence we can have in the model.
 - AB – Gave an overview of the design solutions section of the methodology.
 - Between the hydrology and rail alignment design is an iterative process. Once we've set up base case, we will run a number of different design solutions through the model to look at different impacts and how we can mitigate those impacts – that might be increasing the structure length or culvert size, rail level adjustment, embankment slope adjustments. We also may look at reviewing design criteria or operational requirements.

- Then we will come back out to community consultation to explain some of those design solutions and get further landowner inputs such as operational requirements. We will then further update the design and run a multi-discipline design review – structures, survey, geotechnical works.
- We will then present the preferred solution to the community, then finalise and feed into EIS.
- AB showed a selection of photos of structures built over floodplains.
- *Questions and discussion*
 - BK – An independent flood modeller has advised that you would need 12 months to do a full and comprehensive flood study. I was involved in a meeting with ARTC and FFJV last week and we were advised that there were no time or cost constraints on the solution. On behalf of families in floodplain, we call on ARTC to build a bridge from Paul Curtis' south-western boundary to the intersection of Elsdon Road. We want this section to be embankment free as we know that any increase in embankment height will increase the height of the water upstream and increased water velocity and erosion downstream. We would like to see a rapid response and approval to this request – before the next CCC if possible. This would go a long way to demonstrating that ARTC is genuine in trying to address the real issues rather than ticking the community consultation box. Anything less than a bridge is unacceptable to us and if it's not possible, ARTC should look elsewhere to locate this Inland Rail. I call on every CCC member to endorse this request.
 - Chair – It is not up to me to provide a response, but I will say that there is an existing embankment in parts. ARTC did say that they would model existing works. ARTC cannot provide a response until the modelling work has been done on what is existing and what will be proposed.
 - LP – How can we have confidence in the modelling when it has failed on the Toowoomba Second Range Crossing project? We're saying build a bridge because then we don't have to rely on the modelling which clearly didn't work.
 - MD – TSRC has very different issues to the Condamine Floodplain.
 - LS – There will be a lot of investigations using best practice across all disciplines. We will look at the option of a viaduct the whole way. There are a whole lot of factors that need to be taken into consideration. We haven't got a solution - we are talking tonight about the methodology for developing a solution. We will provide costs for the options that we look at and that is going to assist in coming up with a good sound engineering solution.
 - RL – you can use the best model in the world, but it depends on what you do with the data you get. How will you set success criteria?
 - Luke Smith – We are looking to establish success criteria as a result of our landowner meetings. People have different concerns and different criteria about what is an acceptable impact. We need to engage with landowners so we can understand success criteria.

- RL – Surely when you cross a floodplain, success criteria such as back water effects which increase inundation, high velocities and erosion where you have culverts, diversion of flow, and shadow effects downstream are standard. Surely there is already a large body of knowledge on what is and isn't acceptable. It is a bit of a cop out to expect community members with no technical background to set these.
 - MBa – We wouldn't expect a specific performance criterion from a hydrological modelling perspective to be reflected in ToR but would expect that to fall out of conversations with regulators. The conditions imposed on previous projects are precedents. The level of tolerable impacts that individual landowners will accept will influence this.
- LP – On behalf of a member, need to consider climate change. If there is climate change, there will be greater amounts of overland flow. Need to consider the impact on lateral pivots.
- Chair – There were several mentions of water as a resource with relation to irrigators. It is not just irrigators who value water as a valuable resource. There are a whole host of values derived from the resource – it can be aesthetic, used for stock and domestic. Every water flow that this infrastructure crosses is important to someone, not just to irrigators.
- GP – Can you confirm that one design option assessed will be a viaduct across whole floodplain?
 - LS – If that is something that is being called for, then we can look at that and the impacts. It's not just water impacts that we need to consider, but also other elements including moving machinery.
 - GP – Can you consider it as being put forward.
- BK – You need to retain existing embankment as it is controlling water levels downstream and you need to maintain the status quo.
 - Chair – Everything on the floodplain developed after that rail line.
 - MB – When we set up the model, we consider existing conditions and any designs get tested against the base case.
- GC – There are various options on the table for crossing the floodplain. This route was chosen based on a desktop costing. If you get to the point of saying this is what we want to build and it's more expensive than the budget, do you build it to the initial budget, pay the money or look at a different route?
 - RS – The concept design had a concept budget. We can't get too far ahead of ourselves – we need to look at the options analysis. If we need to look at long viaduct structure, that would open up a conversation. In terms of whether that would open up consideration of alternative alignments, that's not something that we can predict at this stage. We are using engineering expertise and understanding of the floodplain to develop design that is fit for purpose and meets success criteria.

- GC – Agree that the CCC is not here to change the alignment. I see that the CCC’s role is to get best outcome regardless of cost. If the cost then become prohibitive, that is someone else’s problem. We are not finishing up with a solution that fits the budget.
- o IJ – There are some other projects above this project that have been on the books for years to capture water before it gets here. Would ARTC put those back on the table to resolve floodplain issue?
 - Chair – Suggest that is opening up a can of worms that would have no end.
- o LP– What is the distance between geotechnical boreholes? Concerned that your drill only goes for 70 metres, whereas it’s known that alluvium in this area goes much deeper than that.
 - MD – Spacing of geotechnical investigations is reasonably coarse at this stage; however we are doing general investigation to gain an understanding of the area and develop design. I mentioned 70 metres before, but the rigs are capable of going much deeper than that if required.
- o GP – How many properties do you need access to for investigations? How many voluntary access agreements do you have?
 - RS – We are still receiving access requests from FFJV. At present they have requested access to about 170 properties. We have Land Access Agreements in place with about 30 property owners for ecological studies.
- o LP – Is ARTC using a blanket property access request form?
 - RS – Yes, but the conditions are set by individual agreement with each landowner.
- o LP – NSW landowners are concerned by this approach.
 - RS – We understand there was some concerns in that space. We see that each landowner has individual needs and requirements and we need to have an individual arrangement with those parties to suit those.
- o LP – Is ARTC going to foot the bill for solicitors to review property access forms?
 - RS – At this stage, there is no intention to do that.
- o GP – Why do you only need access to 30 sites for ecological surveys between the Border and Gowrie?
 - MBa – The number of property access agreements in place is reflective of the scheduling of surveys. The first terrestrial ecological survey can be undertaken with the existing number of property access agreements. The second survey, later in the year, will require further access agreements to be in place. The ecological approach to site surveys is based on validating desktop habitat modelling. Therefore the team can target specific locations required to validate desktop

	<p>habitat mapping, instead of surveying every property within the Study Area. This approach has been endorsed by regulators at both State and Commonwealth level. The land access requirements differ on a discipline-by-discipline basis.</p> <ul style="list-style-type: none"> ○ Chair – To summarise, and in response to the request from Brett, all options are on the table and nothing is ruled out. There is ample opportunity for us as a community to be involved. My personal view is that we would be doing the community a disservice if we didn't facilitate and participate in the data collection required for the EIS and design process. Am I hearing anything different from the committee? <ul style="list-style-type: none"> - <i>No objections were raised.</i>
<p>4. EIS engagement program</p>	<ul style="list-style-type: none"> ● RS tabled the draft EIS engagement program, noting that it was subject to change as a result of FFJV finalising its program and the Terms of Reference for the project. <ul style="list-style-type: none"> ○ Similar programs have been developed for the other Inland Rail projects. ○ The green sections indicate periods of consultation on the specific elements, but there will also be ongoing consultation throughout the whole EIS and design development process. ● RS provided an overview of upcoming consultation for the Condamine floodplain crossing study. <ul style="list-style-type: none"> ○ ARTC hosting community consultation sessions on 19 and 21 April 2018 in Millmerran and Brookstead. The format of these will be a brief presentation on the methodology, followed by the opportunity for attendees to speak one-on-one with technical specialists. ○ We will be bringing an initial solution for crossing the Condamine floodplain to the community for consultation mid-year and a preferred solution at the end of the year. ● <i>Questions and discussion</i> <ul style="list-style-type: none"> ○ JC – Will you have a preliminary alignment by September 2018? People outside the Condamine don't know where it might go. <ul style="list-style-type: none"> - RS –We will have more surety of the alignment at the 30% design, which is scheduled for September. We first need to consult with landowners and carry out geotechnical and other investigations to develop the alignment – there is still a lot of work to do. ○ Chair – Will technical success criteria for modelling be included in the dToR? <ul style="list-style-type: none"> - MB – We would expect to see technical success criteria for hydrology included in the dToR. For other technical disciplines, we will have to wait and see what is included as dToR have not yet been released. Community members will have the opportunity to comment to help determine what is included in the final ToR. There are final ToR for other Inland Rail projects, which are a baseline for what we can expect for the B2G ToR, but are not a direct reflection of the ToR for this project. - Chair – just because the success criteria aren't included in the dToR, doesn't mean you can't suggest for them to be there. You can make a

	<p>suggestion to the Coordinator-General and he can compel ARTC to answer that question in the EIS. It is very important for us as a committee to get our heads around what is and isn't included in the ToR as we do have an opportunity to have issues included.</p> <ul style="list-style-type: none"> ○ KS – What measures are in place for stop the rabbits from crossing the rail line and the Moreton Rabbit Fence? <ul style="list-style-type: none"> - GR – Members from the Darling Downs Rabbit Board attended our community information sessions in October 2018 and spoke to us about design solutions and provided some input on what has been successful. We will continue discussions with the board and incorporate their recommendations into our design.
<p>5. General business</p>	<ul style="list-style-type: none"> ● <i>Questions and discussion</i> <ul style="list-style-type: none"> ○ JM – Local content and opportunities for the local workforce was raised at the last meeting of the Inner Darling Downs CCC and an assurance was given by ARTC that this would be upheld. Within a week of that meeting, there was an advertisement run by a Brisbane recruitment agency for community engagement staff in Toowoomba. This could have been done by a local agency that understands Toowoomba. This kind of contract can make a big difference to a small business – it is not just the big stuff but the small stuff that makes a difference. <ul style="list-style-type: none"> - RS – Thank you for the feedback. We will take on board. ○ MO – When should we look at local contractors being used? <ul style="list-style-type: none"> - RS – I will find out and provide some information to the CCC. At this stage of the project, the opportunities for local businesses won't be as prevalent as in the construction stage.
<p>6. Conclusion</p>	<ul style="list-style-type: none"> ● Meeting closed at 8.15pm.