MEETING NOTES

Name of meeting: **Foxground & Berry Bypass southern route review**
Technical Investigation Group
Meeting 1

Location of meeting: AECOM Offices, Level 21, 420 George Street, Sydney, NSW 2000

Meeting facilitator: Steve Zhivanovich

Date: 03/02/2012 **Time:** 10am

Attendees:

Attendee	Organisation
Steve Zhivanovich (SZ)	RMS
Peter Stewart (PS)	Peter Stewart Consulting
Annabel Killen (AK)	Evans & Peck
Jon Williamson (JW)	Aecom
David Kennewell (DK)	Aecom
Glen Smith (GS)	Aecom

	Item	Comment	Action
	1. Rail crossing: Consideration of precast concrete arch solution	Possibility of precast concrete arch solution for railway crossing instead of Super T bridge. Options: Bebo, tekspan Aecom developing design to determine dimensions	GS
		Design of arch over railway line Parameters for design around rail line (same as Fern St): duplication of rail line to west, provision for electrification (5.8m clearance), allowance maintenance tracks, satisfaction of deflection limits Route crosses railway line with a skew increasing the span of the bridge: Aecom to examine reduction of the skew without causing problems for the horizontal alignment.	GS
		Preliminary design dimensions. Preliminary Bebo arch design developed. Provides for a rail to road level with 8.9m clearance. This gives minimal cover to pavement. Cover to pavement requirements to be checked with structural designers.	GS SZ to contact Ken O'Neill
		Flooding considerations: 20 year flooding events and greater are currently overtopping the rail: a precast arch system would result in higher impact from 20 year flooding events and greater. Water would back up behind the concrete arch for these events. An increased	DK

		number/size of culverts would be required to mitigate this effect Upgrades to culverts under rail likely to be required: culverts would have to be jacked in to satisfy tolerances for deflection – this would be expensive. Flooding considerations: intersection with waterway at an angle that exacerbates the impacts of flooding	
		Aecom to provide documentation from external sources of information of flood impacts.	DK
	2. Climate change impact	Climate change projections to 2100 to be taken into account by design (within 100 year design life) • North of Berry: Climate change impact arises from increased intensity of rainfall – 6% increase in intensity of rainfall • South of berry: impact arises from increased level of Shoalhaven River, increased flood level in open/flat floodplain– 700mm allowance for southern bypass	Noted
		• Aecom to provide details of relevant legislation	DK
		• Aecom to provide further details as to which areas are subject to which climate change impacts	DK
		• Post meeting note (6 Feb): RdR to query legislative requirements with Julian Watson	RdR
	3. Flooding impact	Comparison of different flooding impacts for northern and southern bypass options: Southern bypass Southern routes are subject to tailwaters from Shoalhaven River flooding back up Broughton Creek The distance of the route from Shoalhaven River governs this factor and the complexity of flood system The catchment area is a secondary factor Northern bypass: The northern bypass routes are at a higher RL and not subject to Shoalhaven River tailwaters.	DK
		Aecom to provide documentation on the flooding impacts in different areas.	DK
		SZ requests visuals of flooding risks, impacts for community communications: images/maps/pictures	DK
		Aecom to optimise design: Emphasis on reducing road RL as far as possible	GS
		Crossings for farmers in flood events where farmland is severed: Aecom to determine	DK

		required level for flood crossings. Indicative information gives a required level of RL8: parameters are farmland level of RL 2, allowance of approx 4m for flooding, 700mm for climate change impacts, approx 1.2m for pavement	
	4. Wharf Road	Southern route: proposed extension of embankment by approx 200m to reduce length of viaduct This would require a steep rise in vertical alignment over a short distance to cross Wharf Road: change from RL8 to RL13 over approximately 400m. Route passes adjacent to the sewerage treatment plant constructed on embankment. The plant is assumed to above the 10 year flood level (to be confirmed). Noted that it is important to ensure that there are no flooding impacts on sewerage treatment plant.	DK
	5. Island embankment	Impact on cost: embankments are cheaper than viaduct, however may be less efficient to construct with multiple different structures. Soft soils are expected under the embankment Increases requirements for fill Aecom to provide analysis of flood paths around island embankment	DK
	6. Southern Bypass impact on Jaspers Brush	Consideration of moving the southern interchange to minimise impact on Jaspers Brush Interchange north of Jaspers Brush: tightens curvature, crosses rail at curve of rail Interchange south of Jaspers Brush: increased risk of soft soils, closer to Shoalhaven River resulting in greater flooding risk	GS
	7. Severance impacts	To be discussed with RdR	SZ
	8. Route length	Optimisation of route alignment to be considered in developing southern bypass route design: moving route north reduces length however tightens curvature compared to a route to the south	Aecom: GS
	9. Structures required for northern bypass option	Aecom to provide details of number of structures, dimensions of structures	Aecom: DK
	10. Southern option: Optimisation of cut/fill	Northern interchange: Consider increasing the cut to provide more economical fill for the embankments for the southern option	GS
	11.ASS	Low probability of ASS for southern bypass option No known occurrence of ASS for northern bypass option	
		Soft soil preliminary information to be obtained from Coffey, to consider relationship between ASS and soft soils	DK
		More information required on extent and	JW

		location of unsuitable soils, soft soils, founding conditions major structures (esp 600m bridge), SPTs if possible Geotech investigation (bore holes) to be undertaken Stephen Coates can prepare brief for more field work. Possibility of doing test pits: Aecom can provide off the shelf REF, Indigenous archaeological concerns could be addressed by having an archaeologist on site for the test pits. **Post meeting note**: Important to ensure that there is consistency in the level of geotech investigation undertaken between northern and southern routes	
		SZ to speak to RdR for available information	SZ
	12. Mass haul analysis	GS to start on mass haul analysis to optimise design with input from SZ and PS	GS