

Appendix A

Project Team Corridor Refinement Route  
Selection Workshop Data Tables

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**WWC CORRIDOR REFINEMENT WORKSHOP SELECTION CRITERIA  
ENVIRONMENT**

Category	Description Of Criteria	Methodology	Assumptions	Section B/C		Section E	
				Orange	Refined Orange	Blue / Orange	Refined Orange
C - WATER QUALITY	Does the option provide for adequate protection of sensitive aquatic ecosystems and aquaculture operations through the provision of spill control on river crossings?	Count number of watercourses crossed or affected by the option.	All options must comply.	19	17	6	6
D - NATIVE FLORA (Threatened Species)	Does the option impact on known key threatened species or, populations?	Comparison of route corridor with mapped from GIS data. Measured as number of recorded sightings within 250 metre wide route corridor.	Key threatened species, or populations are defined as those listed under the <i>Threatened Species Conservation Act 1997</i> or <i>Environment Protection and Biodiversity Conservation Act 1999</i> as mapped by DEC (NPWS) and DEH respectively.	0	0	2	1
	Does the option impact on potential habitat of threatened species or populations?	Measured as the number of potential threatened species within 250 metre wide route corridor.	Potential habitat Counted for Section B (B) Counted for Section C (C)	B = 4 C = 6	B = 4 C = 6	None known subject to further detailed investigations during concept design, although noted likely in Wells Crossing FR and in vicinity of Halfway Creek.	
E – NATIVE FLORA (Vegetation)	Comparatively, what is the total area of native vegetation to be cleared?	Measurement of area (Ha) directly impacted from GIS data based on indicative footprint.	-	55	82	73	90
F – NATIVE FLORA (Communities)	Comparatively, what is to the area of endangered ecological community to be cleared?	Measurement of area (Ha) directly impacted from GIS data based on indicative footprint.		22	23	None known subject to further detailed investigations during concept design, although noted possible in vicinity of Halfway Creek.	
G - NATIVE FAUNA (Known threatened species)	Does the option impact on known key significant threatened species, populations or ecological communities?	Comparison of route corridor with mapped from GIS data. Measured as area (ha) of habitat with high potential within 250 metre route corridor.	Threatened species, populations or ecological communities are defined as those listed under the <i>Threatened Species Conservation Act 1997</i> , <i>Environment Protection and Biodiversity Conservation Act</i> or <i>Fisheries Management Act</i>	H = 5.5 M = 46 L = 51	H = 5.5 M = 51 L = 38	Subject to further detailed investigations during concept design, although noted that likely high habitat values around Halfway Creek and Wells Crossing Flora Reserve.	
	Does the option impact on potential habitat of threatened species or populations?	Measured as the number of potential threatened species within 250 metre wide route corridor.	Potential habitat Counted for Section B (B) Counted for Section C (C)	B = 42 C = 42	B = 32 C = 31	None known subject to further detailed investigations during concept design, although noted likely in Wells Crossing FR and in vicinity of Halfway Creek.	
H – NATIVE FAUNA (Known wildlife corridors)	Does the option cross known wildlife corridors.	Comparison of route corridor with DEC mapped wildlife corridors  R = Regional corridor SR = sub-regional corridor	A new severance is considered worse than widening an existing severance. Qualitative assessment	Creation of new corridor through 1 SR and widening through 1 SR & 1 R and largely widening in 1SR.	Creation of new corridor through 2 SR, and widening in 1 SR & 1 R	Widening of existing through 1 R, and clearing on edge of 1 SR	Creates new corridor through 1 R



**WWC CORRIDOR REFINEMENT WORKSHOP SELECTION CRITERIA  
FUNCTIONAL**

Category	Description Of Criteria	Methodology	Assumptions	Section B/C		Section E	
				Orange	Refined Orange	Blue / Orange	Refined Orange
A - TRANSPORT EFFICIENCY (Light Vehicles)	Comparatively, what is the travel time for the route option?	Measured as travel time. (Seconds)	Calculated from the methodology for travel time used in the Road User Delay - Working Paper, 2005.	413	386	320	315
B - Engineering risks	Comparatively, what length of the route is over soft soils / flood plains	Measured of length of the route over identified soft soil areas / flood plains	Indicates difficulty of construction and has impact on cost and time for construction.	2260	2220	N/A	N/A
	Comparatively assess the <b>construction</b> safety of the routes in terms of plant operation	Count the number of cuttings on existing slopes >1:5 (20%)	Indicator of the danger to plant of overturning Based on the 4.5% Class M grades assessed at the RSW	5 (Ch 9500 - Cutting Length 200m Ch10800 - Cutting Length 300m Ch11600 - Cutting Length 1200 Ch12600 - Cutting Length 300m Ch13500 - Cutting Length 500m *(Shared with Section D))	5 (Ch9000 - Cutting Length 300m Ch10000 - Cutting Length 200m Ch10500 - Cutting Length 200m Ch11100 - Cutting Length 200m Ch12800 - Cutting Length 500m *(Shared with Section D))	Nil	Nil
	Widening of existing cuttings	Lengths of cutting > 5m in height		2655	2398	Nil	Nil
C – Transport Efficiency (Heavy vehicles)	Comparatively, determine the Heavy Vehicle Operating Costs (HVOC)	Methodology in the RTA Economic Analysis Manual (2003) Calculated vehicle cost per trip from the start of Section B to the end of Section C in 2016 (vcpt 2016) and 2036 (vcpt 2036). Calculated Annual HVOC (AC) for 2016 and 2036.	HVOC calculated from 2003 costs. Average speed of 80km/hr through for both options. Calculated on the routes with a 6% maximum grade. This differs from the 4.5% equivalent grades used at the RSW and in B – Engineering Risks. Calculated for projected growths (and respective V/C ratios) for 2016 and 2036 from the Preliminary Traffic Assessment. Assumed no vehicle stopping in M class scenario.	vcpt 2016: \$7.15 vcot 2036: \$7.44 AC 2016: \$6.6M AC 2036: \$12.7M	vcpt 2016: \$6.85 vcpt 2036: \$7.12 AC 2016: \$6.3M AC 2036: \$12.2M	Not calculated due to minimum grades.	

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D - Re-use of existing asset	Comparatively, does the option maximise the use of the existing road reserve?	Measured as length of existing road pavement used as a highway carriageway.		2789 (28%)	2360 (25%)	3875 (49%)	3250 (42%)
E - Staging opportunities (investment for early benefits)	Can the option be constructed in stages to achieve early benefits in safety or traffic interfaces with the works area?	The group will be briefed on the advantages and disadvantages of each option and a decision made based on consensus.					
F - Safety during construction	Extent of areas where speed zones would be required during construction, extent of traffic interfaces within the works area.	The group will be briefed on the advantages and disadvantages of each option and a decision made based on consensus.					




WWC CORRIDOR REFINEMENT WORKSHOP SELECTION CRITERIA COMMUNITY							
Category	Description Of Criteria	Methodology	Assumptions	Section B/C		Section E	
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A – Noise for private properties	Comparatively, what is the relative noise impact?	Use weighted noise impact measure. See Preliminary Noise Assessment Report.	As documented in the Preliminary Noise Assessment Report. The greater the weighted noise impact number, the greater the impact the route will have on surrounding properties with respect to noise	75	81	45	50
B - Community severance / consolidation	Comparatively, does the option sever parts of a community(s). Eg Corindi.	Comparison of route corridor with defined community villages, including consideration of new or existing impact.	Defined communities are Corindi Beach and Corindi.	Corindi: Options pass approx. 400m to the west.		n/a	n/a
C- Private Properties Acquired	Comparatively, total area of properties impacted.	Measured as an area (ha) from the Property Impact Report.	Privately owned property only, which is defined as non-government structures / property.	74	84	24.5	40
D – Structures acquired	Comparatively, how many structures / houses are affected?	Measured as number of structures (S) and homes (H) identified in the Property Impact Report.	S = Structures H = Houses	S = 7 H = 5	S = 3 H = 3	S=1 H=1	S = 4 H = 4
E - Visual Amenity	Comparatively, what is the potential visual impact of the option?	Length of option in a high visual constraint area.	As per UDLVA report The greater the length the worse the outcome in terms of visual amenity.	2590	3118	231	233
F – Commercial Business Impacts	Comparatively, what businesses are impacted by the option?	Group will be briefed on potential impacts. List commercial businesses directly impacted by each route.	Potential impacts through acquisition or loss of passing trade. Possible benefits from enhancement of village as a rest opportunity or tourism.	Directly impacts the non-operational quarry (Apokis)	Traverse non-operational quarry (Apokis)	Service Station and General Store (Kungala Road)	Big Garden Furniture
		Consider the commercial businesses with potentially impacted economically by the route.	Includes businesses that will lose highway frontage Includes businesses that will lose access to the highway	<b>Minimal</b>	<b>Minimal</b>	Potential changes to access arrangement for the Service Station and corner store.	Benefields Rose Farm Service station and general store Bananacoast 24hr Heavy Float Tow truck service

**WWC CORRIDOR REFINEMENT WORKSHOP SELECTION CRITERIA  
COMMUNITY**


Category	Description Of Criteria	Methodology	Assumptions	Section B/C		Section E	
				Orange	Refined Orange	Blue / Orange	Refined Orange
G - Indigenous Heritage	Does the option have an impact on known indigenous heritage?	Comparison of route corridor with mapped data in vicinity from GIS data. Measured as number of sites within 250m route corridor.	Indigenous heritage is defined as: Lands vested in LALC under the ALR Act 1982; lands owned by an Aboriginal group, sites registered on the DEC AHIMS register, and other known sites of cultural sensitivity that are not listed. Non-Indigenous – National, State, Regional or Local listings under an environmental planning instrument or statutory register..	Vested lands: none affected		Vested lands: potentially impacts on 2 parcels.	
				Owned lands: none affected		Owned lands: none affected	
				AHIMS: none affected		AHIMS: none affected	
				Unlisted sites: passes adjacent to known burial area in Section B	Unlisted sites: passes adjacent to known burial area in section B	Unlisted sites: Avoids impact to potential culturally sensitive area and potential location of bora site at Halfway Creek.	Unlisted sites: potentially impacts bora site at Halfway Creek and severs area of cultural sensitivity surrounding the bora site.
H – Non Indigenous	Does the option have an impact on known non indigenous heritage?	Comparison of route corridor with mapped data in vicinity from GIS data. Measured as number of sites within 250m route corridor.	Non-Indigenous heritage is defined as – National, State, Regional or Local listings under an environmental planning instrument or statutory register.	Non-Indigenous: nil known		Non-Indigenous: nil known	Non-Indigenous: 1
I – Loss of productive land	Comparatively, what is the area of productive land lost as a result of the option?	Measured as direct area (hectares) of productive land acquired for the option within the impact area. LEP	Productive land is defined as: Agricultural land zoned for rural or horticultural purposes under an LEP.	106	107	48	59
		FMZ	State Forest – estate mapped as Zone 4 by Forests NSW.	0	0	0	0
J - Property Impact – loss of access to public recreation lands	Comparatively, does the option impact on a Govt. Estate (e.g. National Park, Nature Reserve, Flora Reserve, State Forest)?	Comparison of route corridor with existing mapped Government estate. Measure area.	Government estate to be included in the assessment are Yuraygir National Park, Newfoundland State Forest (three separate parcels), Barcoongere State Forest, Yuraygir State Conservation Area and Wells Crossing Flora Reserve.	0	0	28	29



### Document Review

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