

Environmental Criteria Weightings Table – Raw Data

No.	Environmental Criteria	Key Attributes	Red	Yellow	Blue	Score	Ranking
Env1	Fauna	<ul style="list-style-type: none"> <li>• Protecting endangered species</li> <li>• Retaining habitat</li> <li>• Maintaining ecological linkages</li> <li>• Increasing biodiversity (average abundance of species)</li> <li>• Maintaining minimum viable habitat area (for species survival)</li> <li>• Avoiding light and noise spill</li> <li>• Underpasses and causeways to preserve connectivity</li> <li>• Human access and its impact on Fauna</li> <li>• Habitat in different areas</li> <li>• Impacts on Carnaby's Cockatoos feeding habitat</li> <li>• Zero impacts on migratory birds</li> </ul>	4	4	38	58	4
Env2	Air quality	<ul style="list-style-type: none"> <li>• Reducing exhaust fumes and green house gases</li> <li>• Improving traffic flow</li> <li>• Distributing traffic</li> <li>• Reducing traffic density</li> <li>• Standard of road</li> <li>• Heavy vehicle emissions</li> <li>• Reduce vehicle emissions</li> </ul>	4	2	23	39	6
Env3	Retention of remnant vegetation	<ul style="list-style-type: none"> <li>• Protecting and grading of native vegetation</li> <li>• Maintenance of ecosystem integrity</li> </ul>	2	1	17	25	12
Env4	Wetlands	<ul style="list-style-type: none"> <li>• Connectivity, functionality and quality</li> <li>• Improving/maintaining water quality</li> <li>• Light and noise spill</li> <li>• Wetland flora and fauna</li> <li>• Treating drainage and runoff</li> <li>• protecting and preserving functionality Qulaity of Beeliar wetlands (Regional)</li> <li>• Enhance water quality</li> <li>• avoid wetlands</li> <li>• Bridge over wetlands</li> <li>• Dredge Bibra Lake</li> <li>• RAMSAR Wetlands</li> </ul>	9	5	34	71	2
Env5	Flora	<ul style="list-style-type: none"> <li>• Maintaining species diversity</li> <li>• Declared rare flora and priority species</li> <li>• Managing and minimising impacts of habitat destruction</li> <li>• Avoid disturbance of fauna and flors</li> <li>• Protection of remnant vegetation</li> <li>• Human access and its impact on Flora</li> <li>• Loss of species</li> <li>• Maintain and retention of Bushland</li> <li>• Improve environment</li> <li>• Preservation of areas that was offset for Fiona Stanley Hospital</li> <li>• Revegetate Degraded area</li> </ul>	2.5	4	20	35.5	9
Env6	Noise pollution	<ul style="list-style-type: none"> <li>• Type and location of noise barriers/abatement</li> <li>• Restricting heavy vehicle through permits</li> <li>• Stop/start traffic movement</li> <li>• Outflow of noise to other adjacent residential areas eg Forrest Road</li> <li>• noise carry over long distance</li> <li>• noise walls</li> <li>• noise impacts on residents in Roe 7 area</li> <li>• Effectiveness of Materials- Dampening Devices- Road Surface</li> </ul>	3	5	35	54	5

Env7	Ecological linkages	<ul style="list-style-type: none"> <li>• Avoiding severance and fragmentation</li> <li>• Maintaining integrity and distribution of species</li> <li>• Flight Paths,</li> <li>• Terrestrial Migration</li> <li>• Between Lakes</li> <li>• Maintain wildlife corridor</li> <li>• Maintain connectivity</li> <li>• Elevation over wetlands</li> <li>• Rehabilitate</li> <li>• Culverts between lakes</li> <li>• Join water courses through dredging</li> <li>• Severance by road</li> <li>• People and fauna</li> </ul>	2	2	28	38	7
Env8	Size of Foot Print	<ul style="list-style-type: none"> <li>• Impact on area of vegetation</li> <li>• No. of priority species</li> <li>• The lakes Area</li> <li>• Natural Bush</li> <li>• Standards of road design - look for innovation to reduce</li> <li>• Minimise impacts</li> <li>• Place environment before cost</li> </ul>	8	6	35	71	2
Env9	Fauna Habitat	<ul style="list-style-type: none"> <li>• Bird Nesting Sites</li> <li>• Maintain Natural Habitat</li> <li>• Bird strike (larger birds)</li> <li>• Swans</li> <li>• Protected Species</li> <li>• Food types</li> <li>• Migratory birds (minimise impact on habitat)</li> </ul>	3	0	27	36	8
Env10	Water Levels	<ul style="list-style-type: none"> <li>• Maintain Natural Levels</li> <li>• Maintain Linkages</li> <li>• During Construction</li> <li>• During operations</li> </ul>	0	1	6	8	22
Env11	Indigenous & European Heritage	<ul style="list-style-type: none"> <li>• Hunting and Gathering</li> <li>• Sense of Place- Indigenous sites-</li> <li>• Sacred sites- Heritage listing- Consultation with elders</li> </ul>	0	1	9	11	20
Env12	Energy Consumption	<ul style="list-style-type: none"> <li>• Carbon Footprint</li> <li>• During Construction and Operation</li> <li>• Fuel and consumption and emission at a regional context</li> </ul>	0	0	8	8	22
Env13	Soil Contamination	<ul style="list-style-type: none"> <li>• Fuel Source for Construction</li> <li>• Acid Sulphate Soils, no building if it exists</li> </ul>	0	0	4	4	29
Env14	Opportunities for Improvement	<ul style="list-style-type: none"> <li>• Rehabilitation</li> <li>• Offsets</li> <li>• Remediation</li> <li>• Enhance degraded areas</li> <li>• Experience the natural environment (Education / Experiential)</li> <li>• Offsets for vegetation cover</li> <li>• World class solution - Best Practice</li> </ul>	1	0	13	16	16
Env15	Actual Risk of damage to the environment caused by construction methods	<ul style="list-style-type: none"> <li>• Number of lanes consideration</li> <li>• Tunnel Options</li> <li>• Independent review of studies</li> <li>• length of studies need to be reviewed</li> </ul>	1	0	11	14	18
Env16	Pollution	<ul style="list-style-type: none"> <li>• Long term pollutants</li> <li>• Short Term Pollutants- Run off-</li> <li>• Groundwater pollution</li> </ul>	0.5	1	20	23.5	14
Env17	Provision of other forms of public transport	<ul style="list-style-type: none"> <li>• Cycleways - Bikes</li> <li>• Light Rail</li> </ul>	1	1	30	35	10

Env18	Incident Management	<ul style="list-style-type: none"> <li>• Accidents</li> <li>• Spillage</li> <li>• Dangerous Goods</li> <li>• Design Control</li> <li>• Fire risk</li> </ul>	2	2	12	22	15
Env19	Incident Prevention	<ul style="list-style-type: none"> <li>• Runoff design</li> <li>• Other design Control</li> </ul>	0	0	8	8	22
Env20	Material Source / Resources		0	0	1	1	33
Env21	Reputation of Constructors - Contractors	<ul style="list-style-type: none"> <li>• Decision making during procurement</li> </ul>	0	0	5	5	28
Env22	Native Arc	<ul style="list-style-type: none"> <li>• Valuable to region, how will they be accommodated</li> <li>• Access to Cockburn wetland centre must be maintained</li> </ul>	1	0	7	10	21
Env23	Mental Component	<ul style="list-style-type: none"> <li>• Environment for humans</li> <li>• Passive enjoyment / experience natural environment</li> <li>• Social health (Suggested by studies)</li> </ul>	0	0	7	7	26
Env24	Impact on wider regional area	<ul style="list-style-type: none"> <li>• Impact zone wider than project area (how its measured)</li> <li>• Reduce traffic elsewhere eg noise air - pollution leach, South, Farrington (balanced picture)</li> <li>• Miantain ecosystem</li> <li>• Impacts of climate change</li> <li>• Zero impact on educational facilities</li> </ul>	9	12	59	110	1
Env25	Water Quality	<ul style="list-style-type: none"> <li>• Trucks leak fuel and coolant</li> <li>• Drainage to avoide pollution of existing water</li> <li>• Contaminants</li> <li>Lake water quality</li> <li>• Improve /filter, recycle, treatment</li> </ul>	1	1	22	27	11
Env26	Vibration	Vehicle load	0	1	6	8	22
Env27	Dilapidation Survey		0	0	4	4	29
Env28	Consideration of other aspects	<ul style="list-style-type: none"> <li>• Main Roads signage</li> <li>• Fire tracks</li> <li>• Similar roadworks completed eg Forrest Highway</li> <li>• Pedestrian Cycling impacts by raising on bridge</li> <li>• Boardwalk to access area</li> <li>• Review impact of previous highway on environment</li> <li>• What is impact etc</li> </ul>	0	0	14	14	18
Env29	Design Consideration	<ul style="list-style-type: none"> <li>• Connectivity of bikes, pedestrians on either side of the highway</li> <li>• Consider upfront</li> </ul>	1	1	10	15	17
Env30	Study of pre-existing / Pre project Environment		0	0	2	2	32
Env31	Safety	<ul style="list-style-type: none"> <li>• Investigate PCBs burried in project area (Old SECWA tipsite)</li> </ul>	0	1	4	6	27
Env32	Amenity	<ul style="list-style-type: none"> <li>• Impacts on people</li> <li>• Health protection</li> <li>• General qulaity of life</li> <li>• Serenity</li> <li>• Visula outcome</li> <li>• Road usres</li> <li>• Park users</li> </ul>	2	3	12	24	13
Env33	Lighting	<ul style="list-style-type: none"> <li>• Minimise light pollution</li> <li>• Light design ensure only local impact</li> </ul>	0	0	3	3	31
	<b>TOTALS</b>		<b>57</b>	<b>54</b>	<b>534</b>	<b>813</b>	<b>(score)</b>