

# Consolidated MCA Criteria

## Environmental

Number	Environmental Criteria	Key Attributes	Red	Yellow	Blue	Score	Ranking	Comment
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> <li>• Fauna Habitat (formerly criteria name of Env9)</li> <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> <li>• Lighting (formerly name of Env33)</li> <li>• Minimise light pollution</li> <li>• Light design ensure only local impact</li> </ul>	7	4	68	97	2	Consolidated with Env 9 (Fauna Habitat) and Env 33 (Lighting)
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 Pollution 9 (formerly name of Soc 16) • Two major high schools - all the stock traffic at traffic lights</li> </ul>	5	2	29	48	7	Consolidated with Soc 16 (Pollution)
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 Quality 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> <li>• Water levels (former criteria name of Env10)</li> <li>• Maintain Natural Levels</li> <li>• Maintain Linkages</li> <li>• During Construction</li> <li>• During operations</li> </ul>	9	6	40	79	5	Consolidated with Env10 (Water Levels)

# Consolidated MCA Criteria

## Environmental

Env5	Flora & Vegetation (Renamed criteria to combine flora and vegetation)	<ul style="list-style-type: none"> <li>• Maintaining species diversity</li> <li>• Protecting and grading native vegetation</li> <li>• Maintaining ecosystem integrity</li> <li>• Declared rare flora and priority species</li> <li>• Managing and minimising impacts of habitat destruction</li> <li>• Avoid disturbance of fauna and flora</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> <li>• Retention of remnant vegetation (formerly name of criteria Env3)</li> <li>• Protecting and grading of native vegetation</li> <li>• Maintenance of ecosystem integrity</li> </ul>	4.5	5	37	60.5	6	Consolidated with Env3 (Retention of remnant vegetation)
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 for birds</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	8	
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> <li>- Actual Risk of damage to the environment caused by construction methods (former criteria name of Env15)</li> <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>	9	6	46	85	4	Combined with Env15 (Actual Risk of damage to the environment caused by construction methods)
Env11	Indigenous & European Heritage	<ul style="list-style-type: none"> <li>• Hunting and Gathering</li> <li>• Sense of Place</li> <li>• Indigenous sites</li> <li>• Sacred sites</li> <li>• Heritage listing</li> <li>• Consultation with elders</li> </ul>	0	1	9	11	12	Note: The SMC team recommends moving this criteria to the social category during the next step of the weightings process.

# Consolidated MCA Criteria

## Environmental

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	13	
Env14	Opportunities for Improvement and Enhancement	<ul style="list-style-type: none"> <li>• Reahbilitation</li> <li>• Offsets</li> <li>- Remediation</li> <li>- Enhance degraded areas</li> <li>- Experience the natural environment (Education / Experiential)</li> <li>- Offstes for vegetation cover</li> <li>- World class solution - Best Practice</li> </ul>	1	0	13	16	10	
Env16	Sources of Contamination	<ul style="list-style-type: none"> <li>• Long term pollutants</li> <li>• Short Term Pollutants</li> <li>• Run off</li> <li>• Groundwater pollution</li> <li>• Soil contamination (former name of criteria Env13)</li> <li>• Fuel source for construction</li> <li>• Acid Sulphate Soils (do not build if it exists)</li> <li>• Incident management (formerly name of Env18)</li> <li>• Accidents</li> <li>• Spillage</li> <li>• Dangerous goods</li> <li>• Design controls</li> <li>• Fire risk</li> <li>• Incident prevention (formerly name of Env19)</li> <li>• Runoff design</li> <li>• Design Control</li> <li>• Water quality (formerly name of Env25)</li> <li>• Trucks leak fuel and coolant</li> <li>• Drainage to avoid pollution of existing water</li> <li>• Contaminants</li> <li>• Lake water quality</li> <li>• Improve, filter, recycle and treatment</li> <li>• Safety (formerly name of Env31)</li> <li>• Investigate PCBs buried in project area (old SECWA tip site)</li> </ul>	3.5	5	70	90.5	3	Consolidated with Env 13 (Soil contamination), Env18 (Incident management), Env19 (Incident prevention), Env25 (Water quality) and Env31 (Safety)
Env17	Provision of other forms of public transport	<ul style="list-style-type: none"> <li>• Cycleways</li> <li>• Bikes</li> <li>• Light Rail</li> </ul>	1	1	30	35	10	
Env20	Material Source / Resources		0	0	1	1	16	
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	Cumulative Effects Analysis

# Consolidated MCA Criteria

## Environmental

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	11	
Env30	Study of pre-existing / Pre project Environment		0	0	2	2	14	
Env 31 (formerly Ec26)	No embankments/reduction of footprint		0	0	2	2	14	
<b>TOTALS:</b>			<b>51</b>	<b>44</b>	<b>456</b>	<b>697</b>		